

FIG. 1

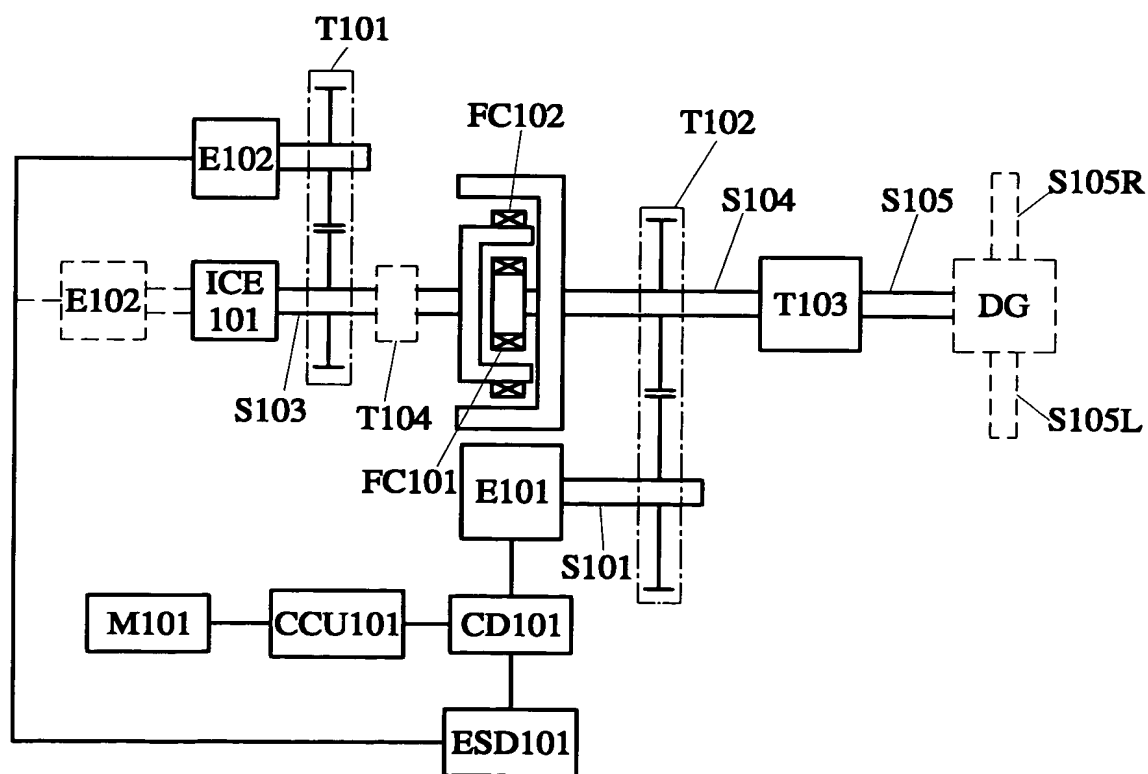


FIG. 2

FIG. 3

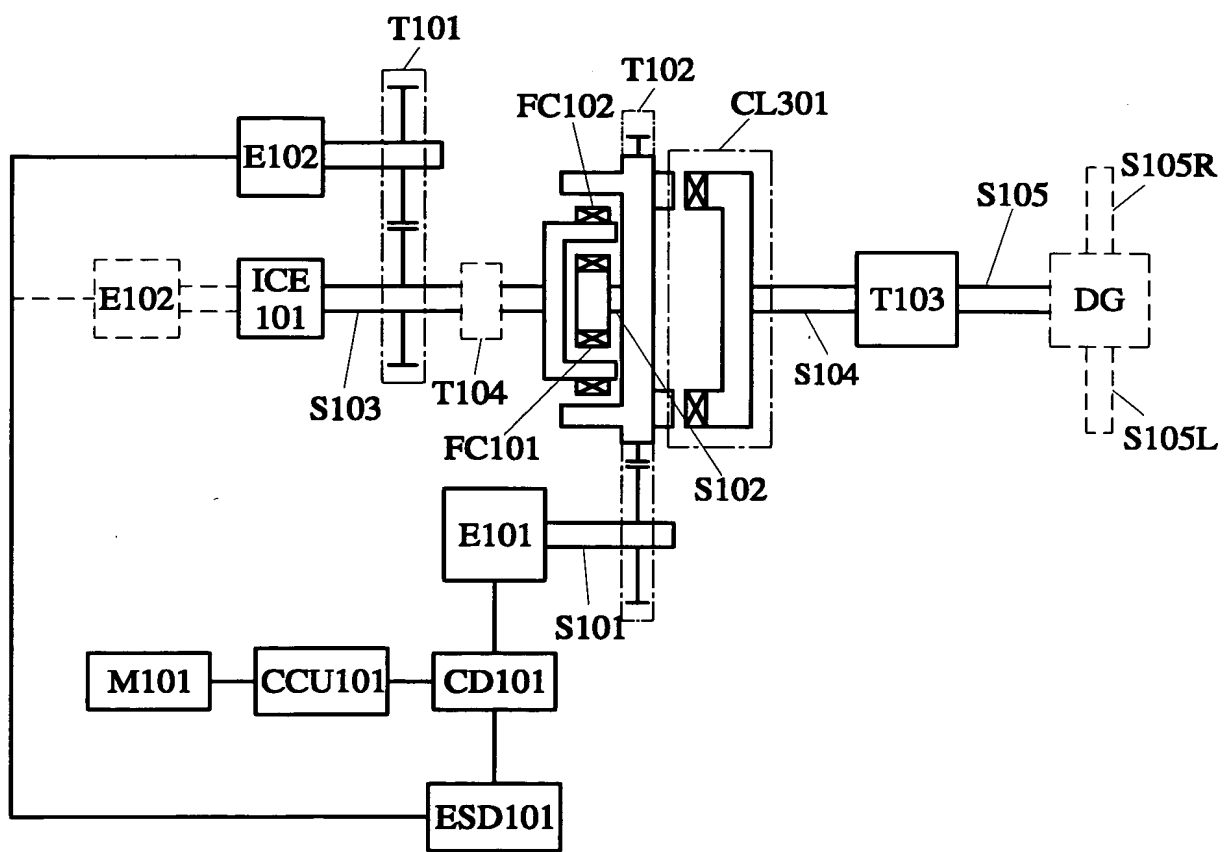


FIG. 3

The block diagram illustrates the control system for a gas turbine engine. The main control loop starts with a reference input E_{102} (dashed box) entering a summing junction. The output of this junction goes to the ICE_{101} (Internal Control Element) block. The output of ICE_{101} is fed back to the summing junction via S_{103} and also passes through T_{104} (a delay block) before entering the FC_{101} (Fuel Control) block. The FC_{101} block is represented by a U-shaped symbol with two internal feedback loops. Its output passes through S_{104} (a gain block) to the E_{101} (Error) block. The output of E_{101} is fed back to the summing junction via CL_{101} (a feedback block) and also passes through S_{104} to the T_{103} (Throttle) block. The output of T_{103} is fed back to the summing junction via S_{105} and also passes through S_{105R} and S_{105L} (dashed boxes) to the DG (Digital) block. The DG block outputs a signal to the ESD_{101} (Engine Speed Detector) block. The ESD_{101} block outputs a signal to the CD_{101} (Control Display) block. The CD_{101} block outputs a signal to the CCU_{101} (Control Computer Unit) block. The CCU_{101} block outputs a signal to the M_{101} (Motor) block. The M_{101} block outputs a signal to the ICE_{101} block via S_{103} . The ICE_{101} block also receives a signal from the T_{101} (Throttle) block via S_{103} . The T_{101} block is a mechanical component with a spring and a damper, receiving a signal from the ICE_{101} block via S_{103} and outputting a signal to the FC_{101} block via T_{104} . The FC_{101} block also receives a signal from the ICE_{101} block via S_{103} .

The diagram illustrates a power plant system with the following components and connections:

- Top Section:**
 - E102** (Generator) is connected to **ICE 101** (Ice Engine).
 - ICE 101** is connected to **T101** (Turbine) and **T104** (Turbine).
 - T101** is connected to **FC102** (Fuel Converter).
 - FC102** is connected to **S104** (Steam Generator) and **FC101** (Fuel Converter).
 - FC101** is connected to **T103** (Turbine).
 - T103** is connected to **S105** (Steam Generator) and **CL101** (Control Valve).
 - S105** is connected to **DG** (Diesel Generator).
- Bottom Section:**
 - M101** (Motor) is connected to **CCU101** (Control Unit).
 - CCU101** is connected to **CD101** (Control Device).
 - CD101** is connected to **ESD101** (Emergency Stop Device).
 - ESD101** is connected to **E102** and **E101R** (Emergency Stop Device).
- Right Section:**
 - E101R** (Emergency Stop Device) is connected to **CLU** (Control Unit).
 - CLU** is connected to **S105R** (Steam Generator).
 - S105R** is connected to **DG** (Diesel Generator).
 - DG** is connected to **S105L** (Steam Generator).
 - S105L** is connected to **E101L** (Emergency Stop Device).
 - E101L** is connected to **CLU** and **S105L**.

FIG. 5

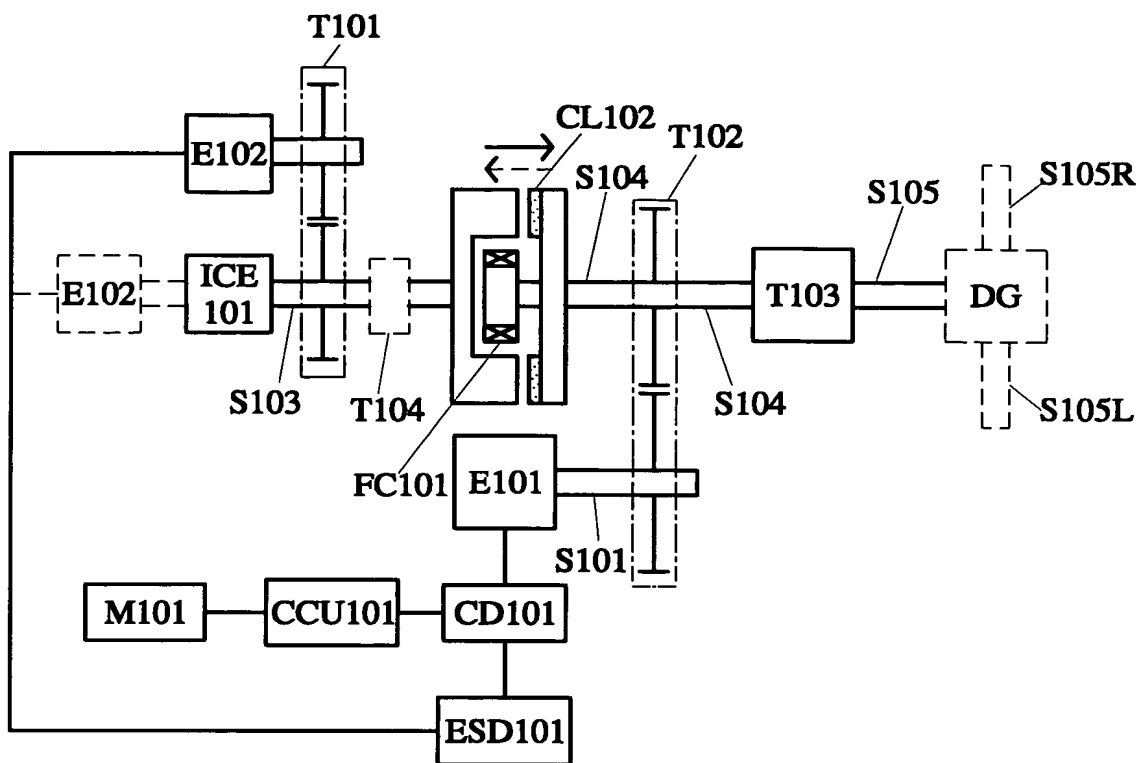


FIG. 6

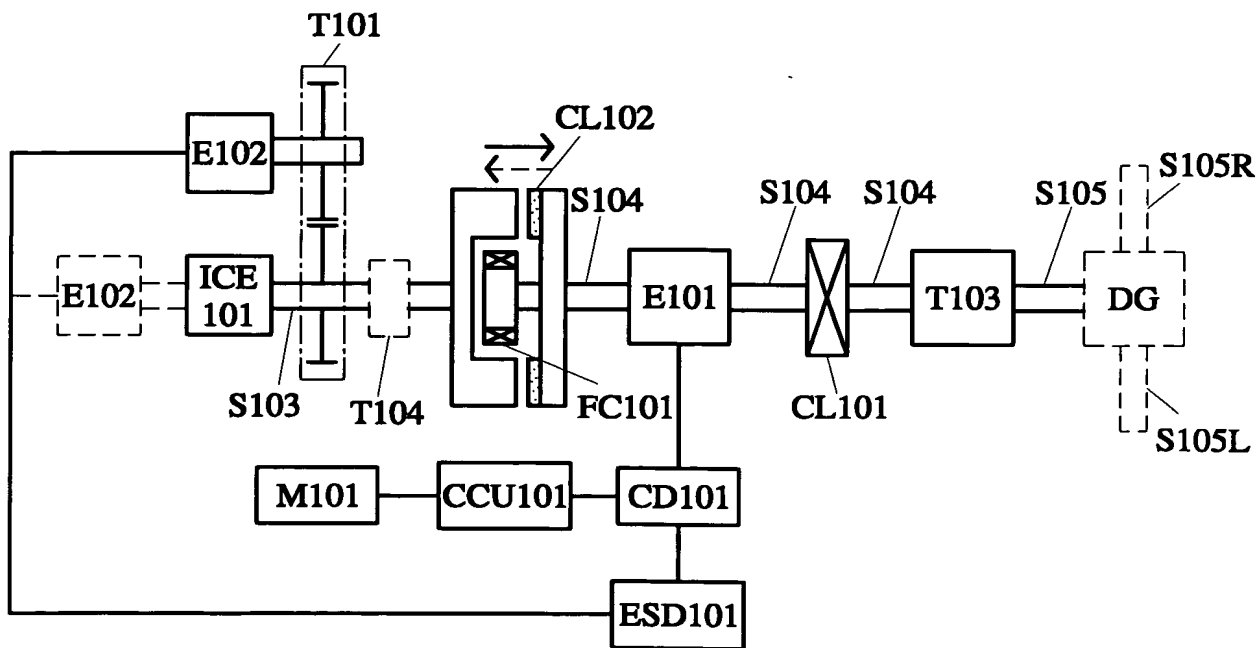


FIG. 7

[illegible]

FIG. 8

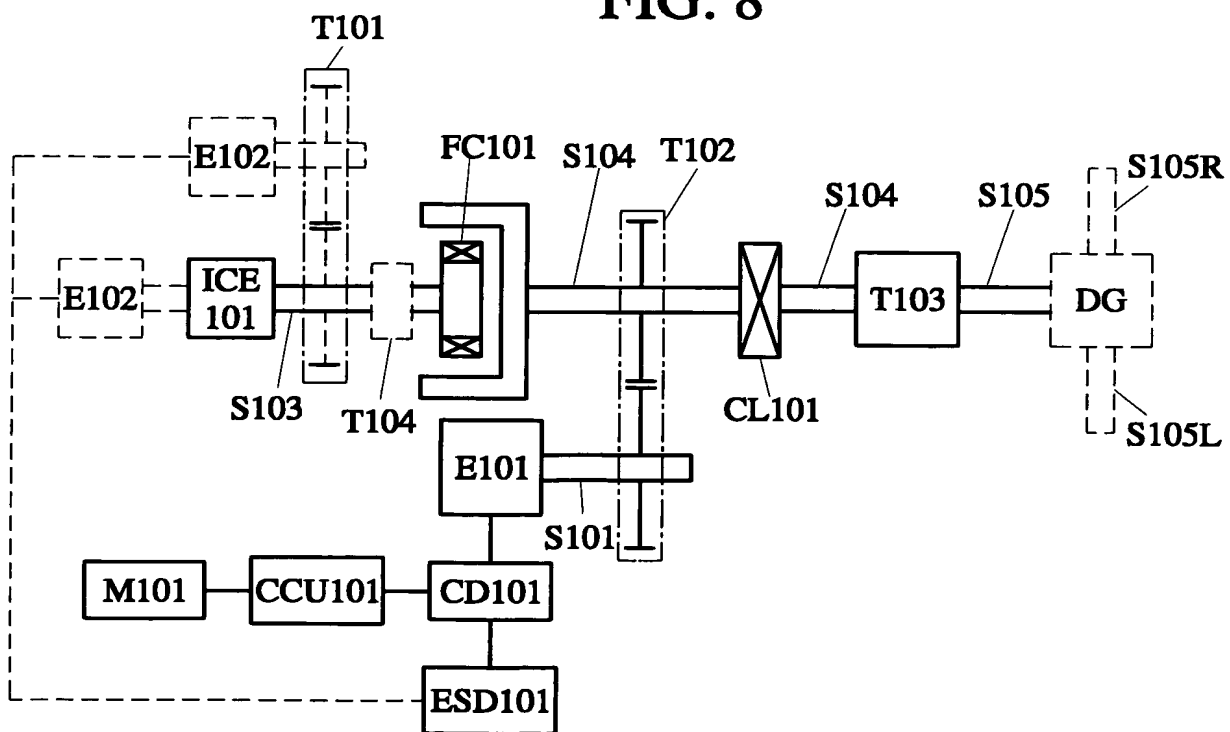


FIG. 9

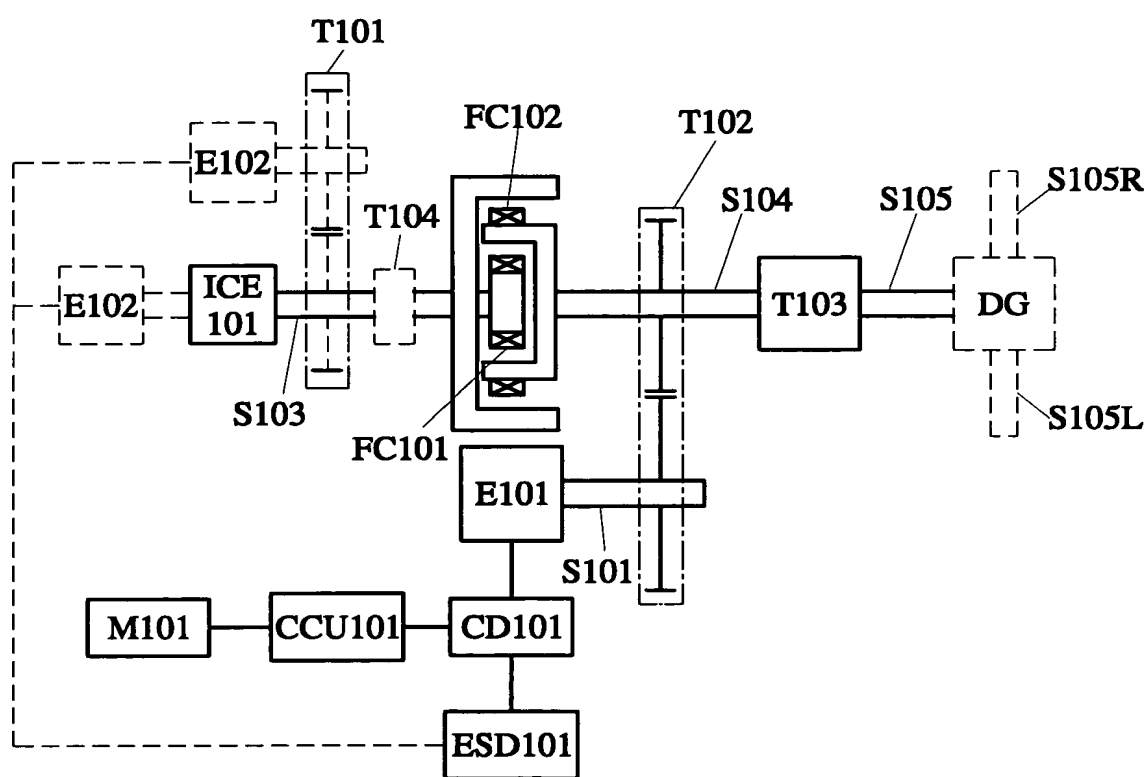


FIG. 10

FIG. 11

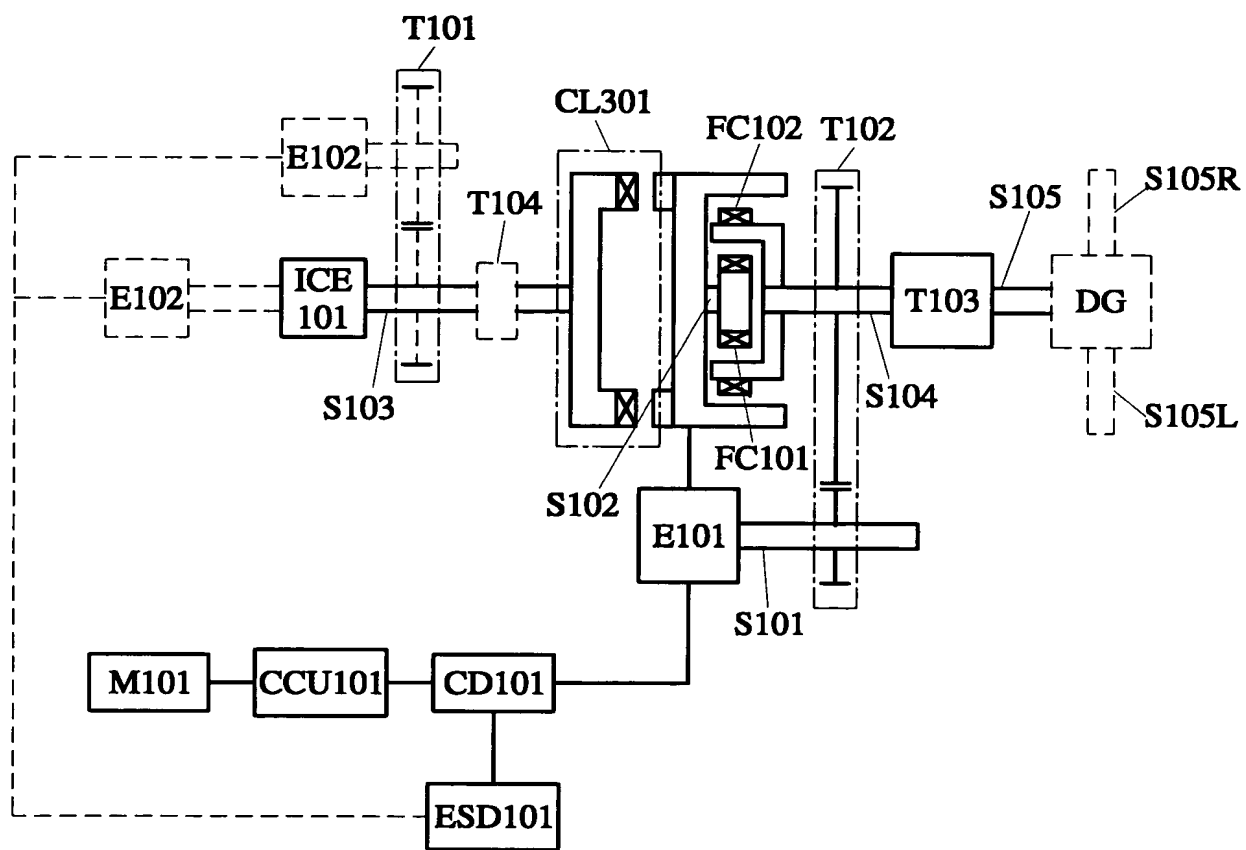


FIG. 11

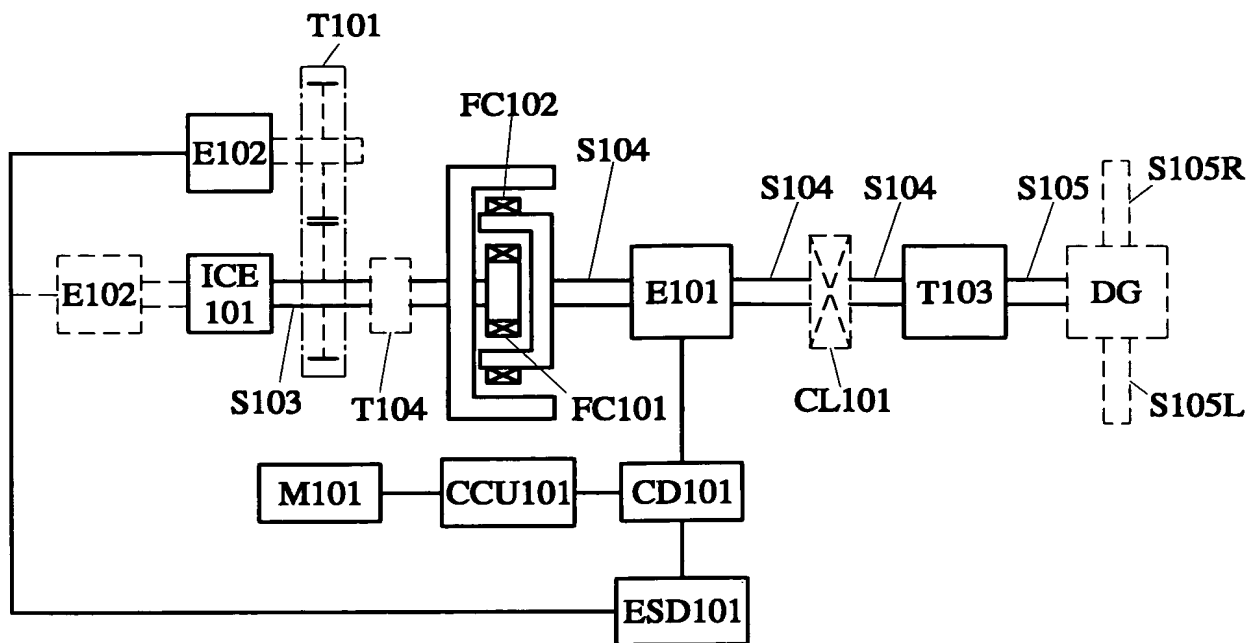


FIG. 12

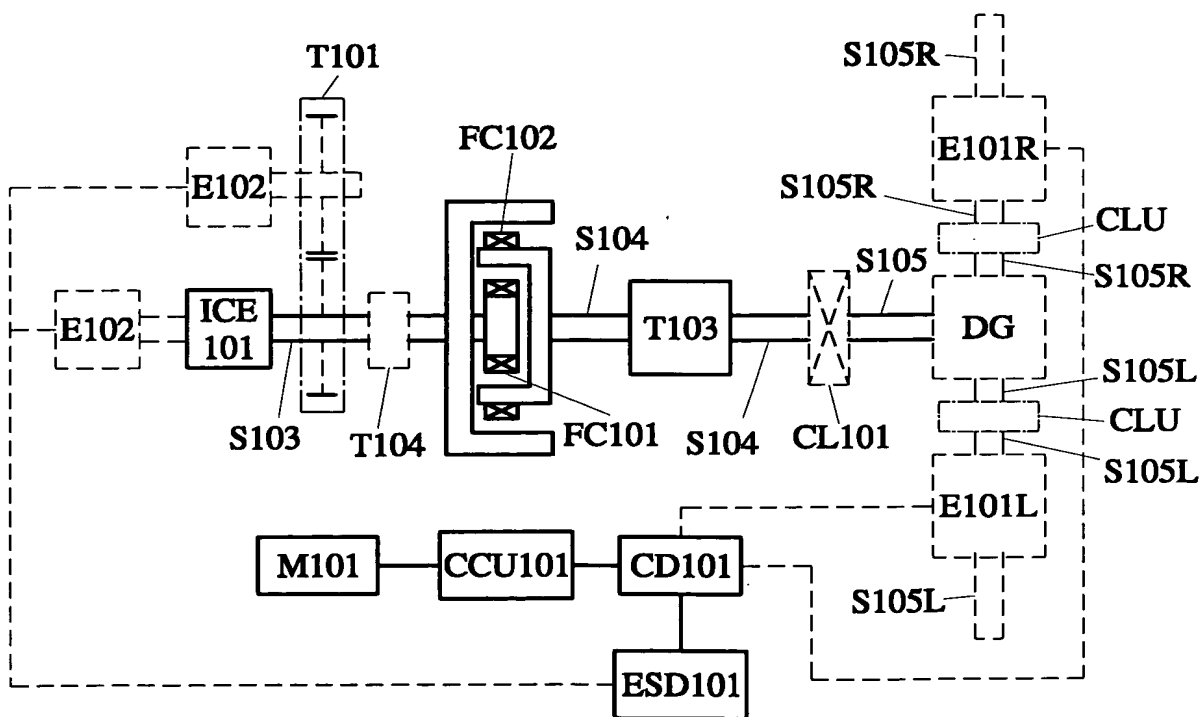


FIG. 13

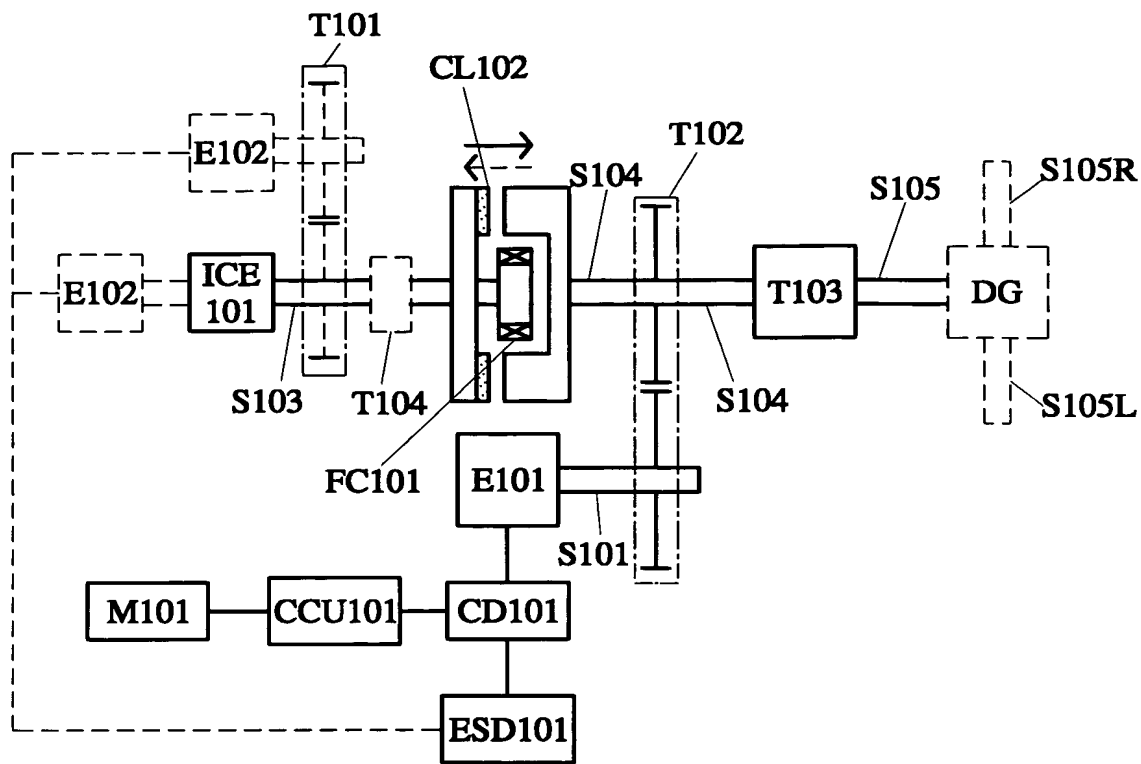


FIG. 14

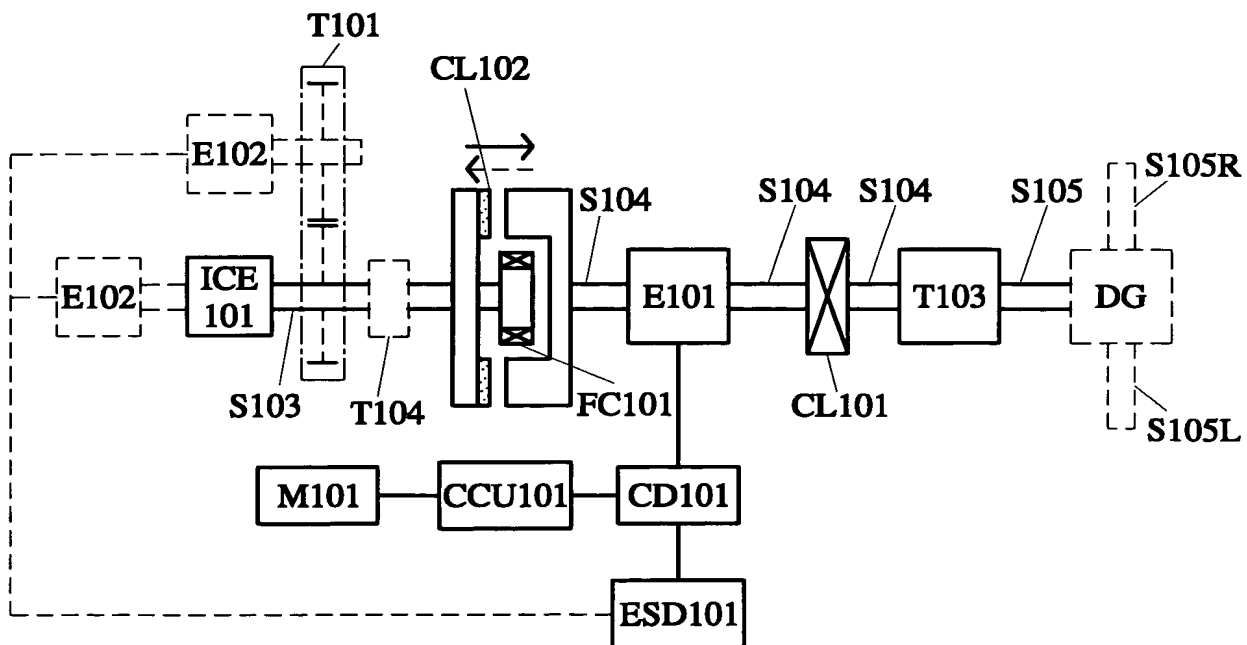


FIG. 15

FIG. 18

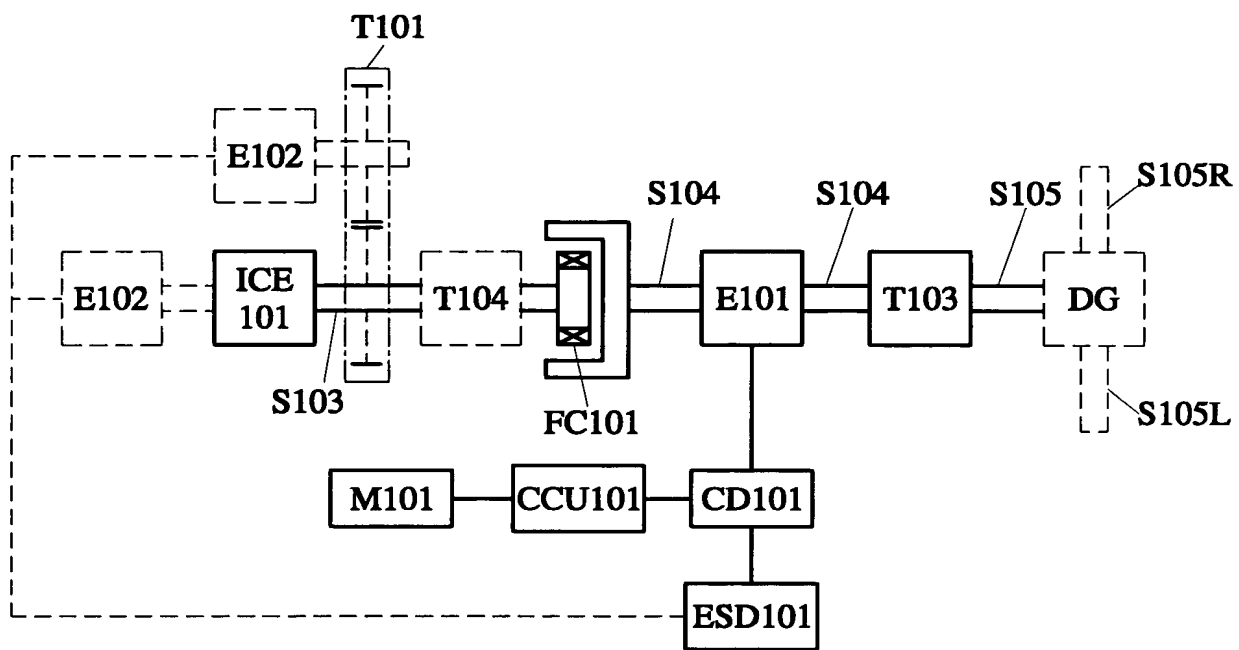


FIG. 18

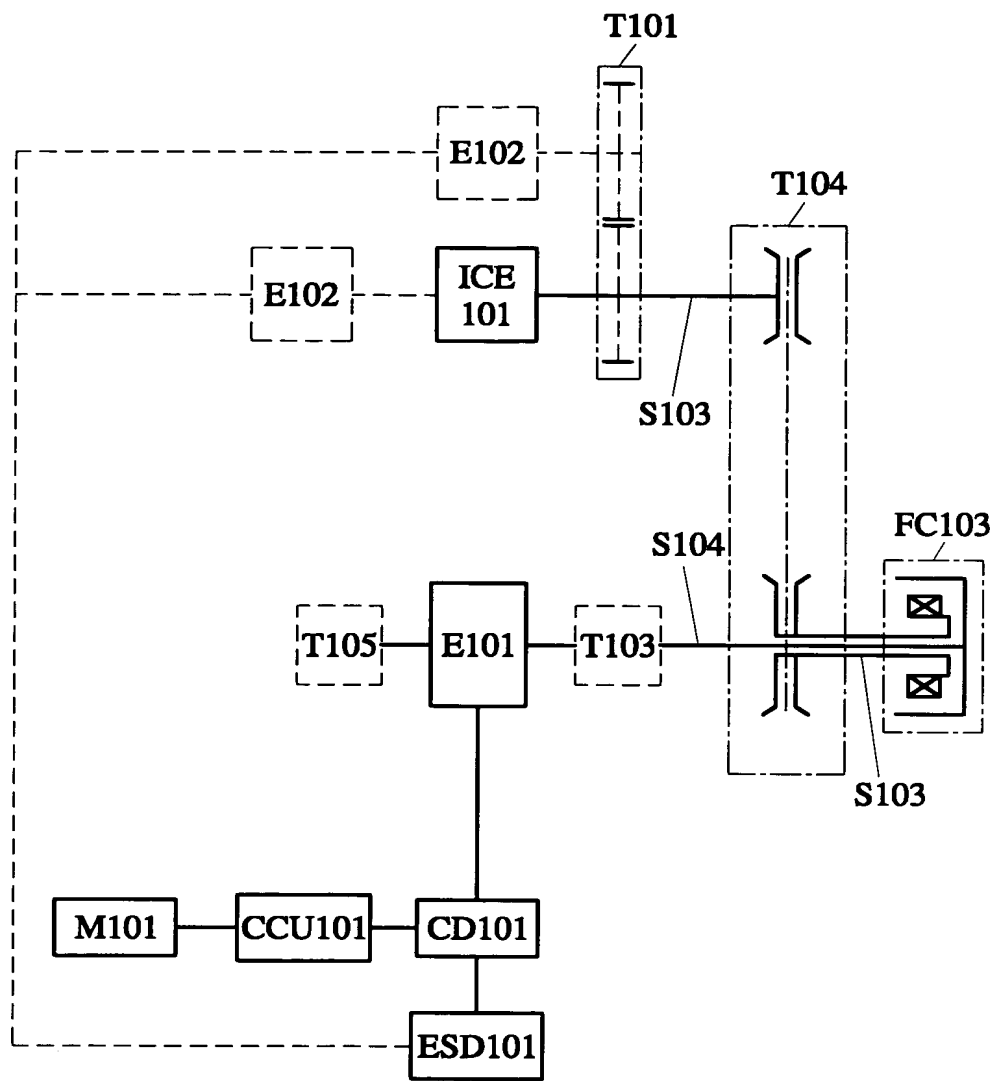


FIG. 21

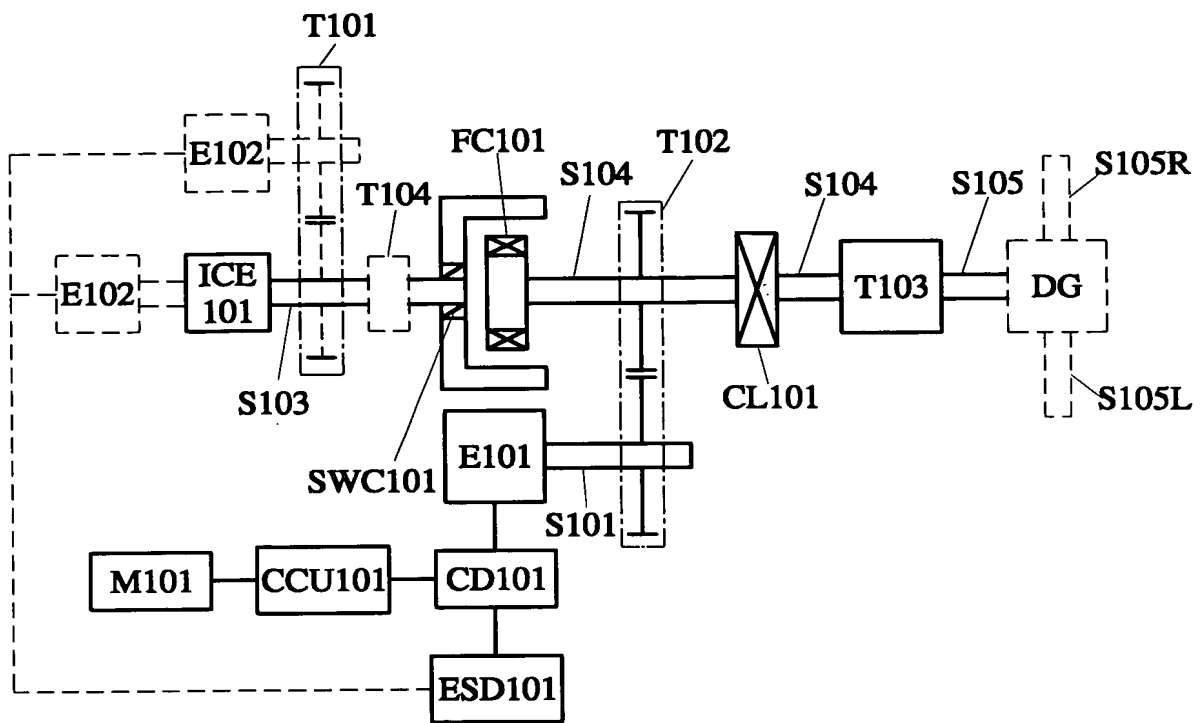


FIG. 22

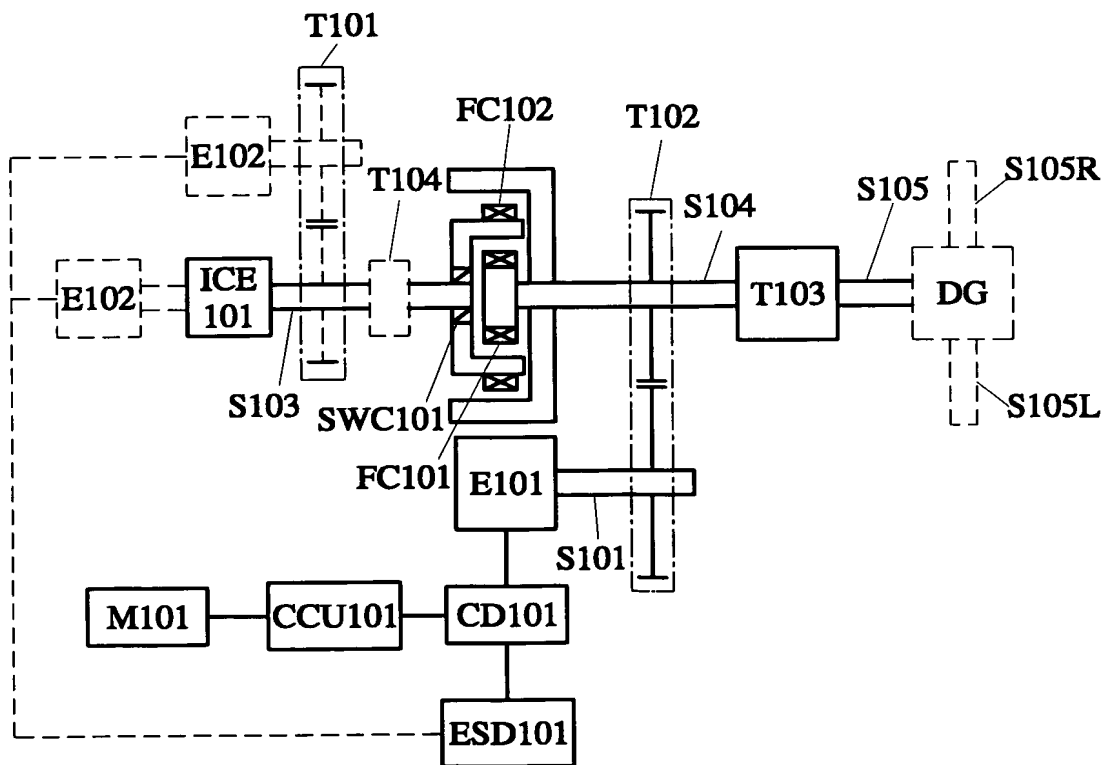


FIG. 23

FIG. 24

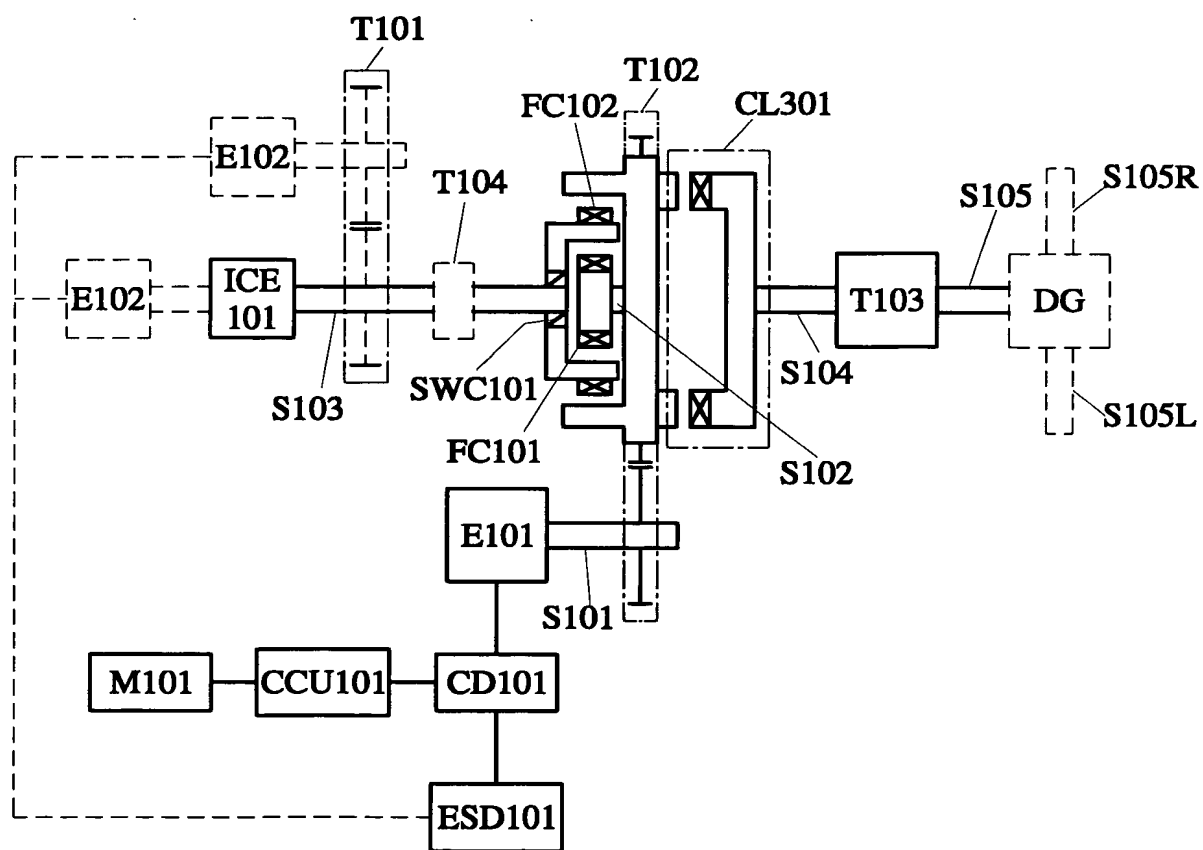


FIG. 24

FIG. 25

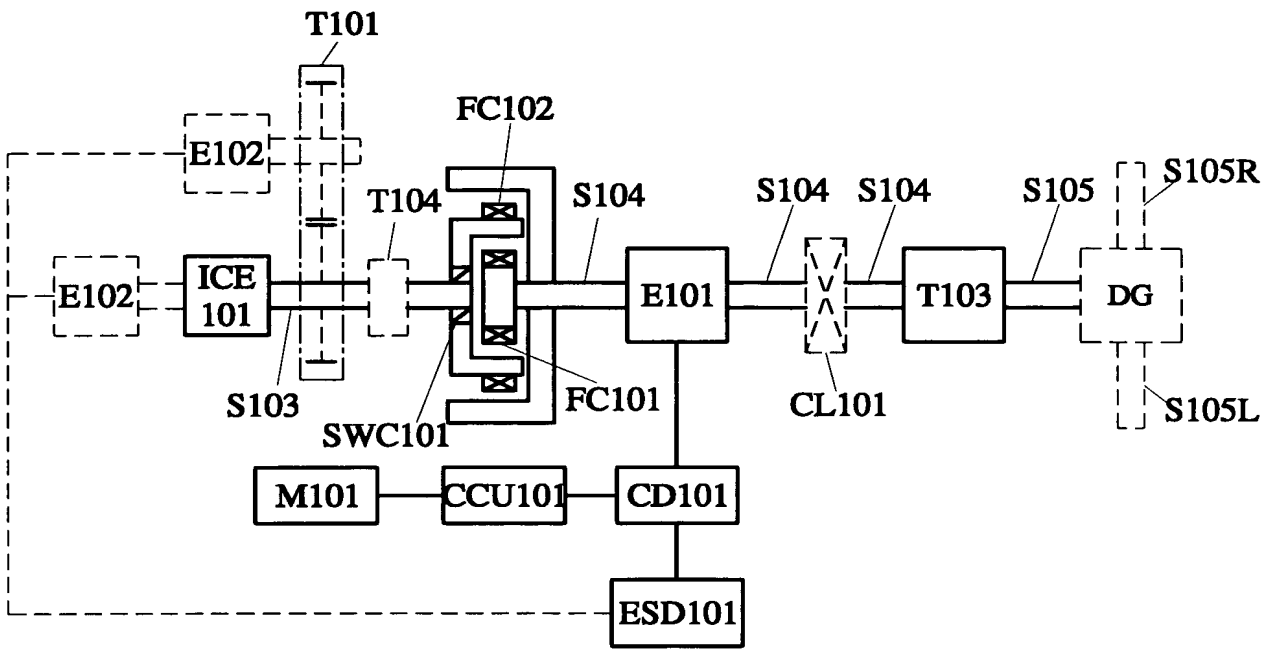
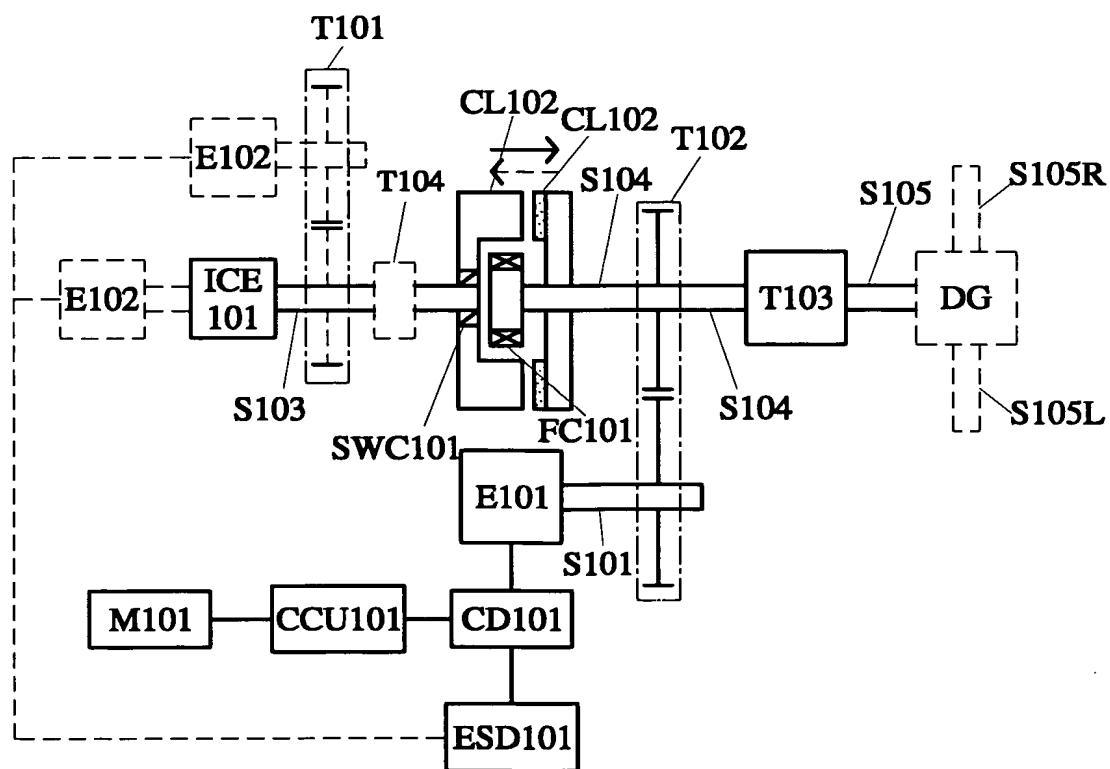
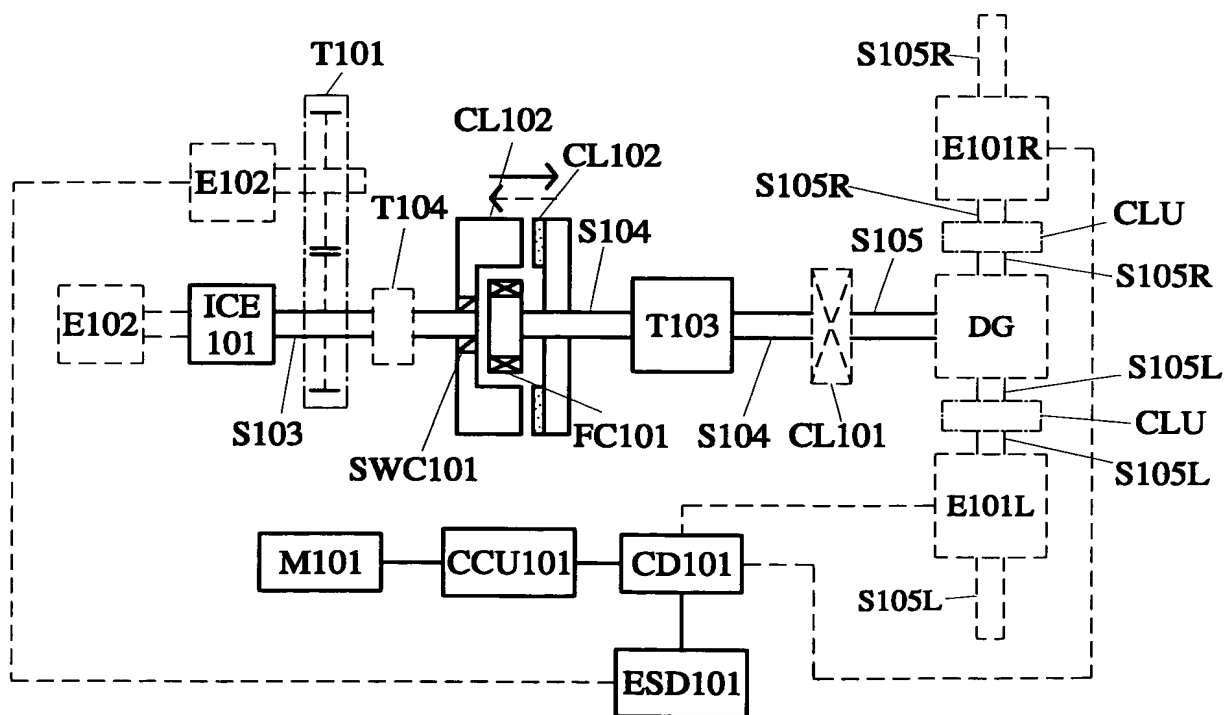
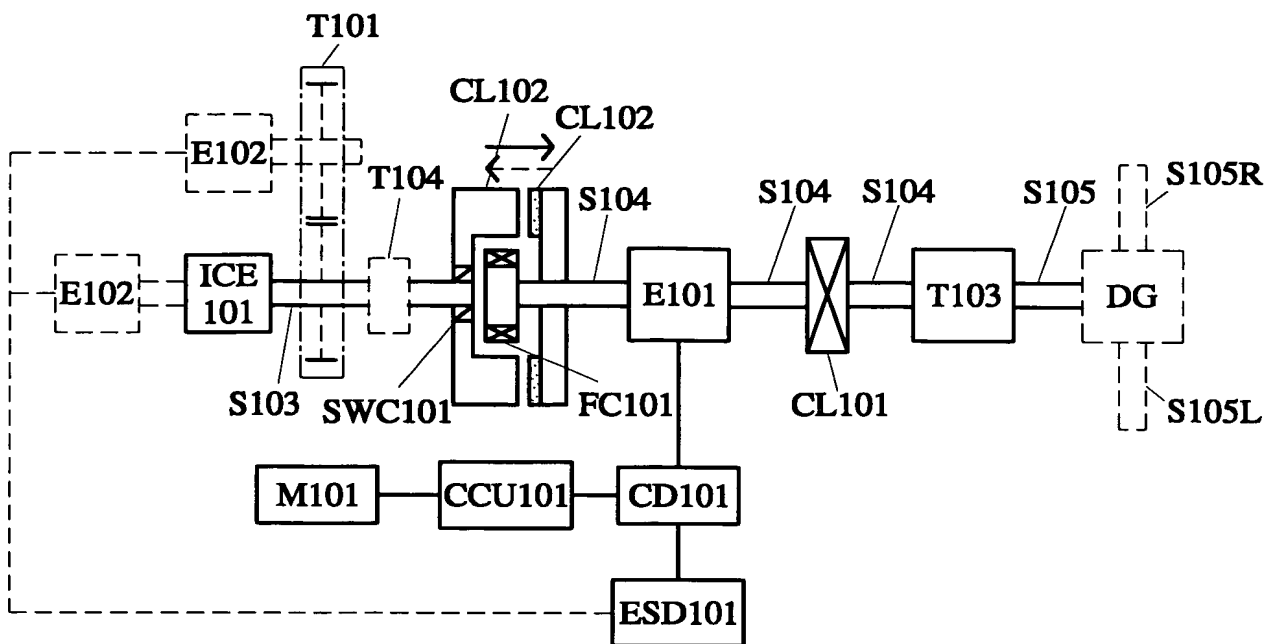


FIG. 25

[illegible]



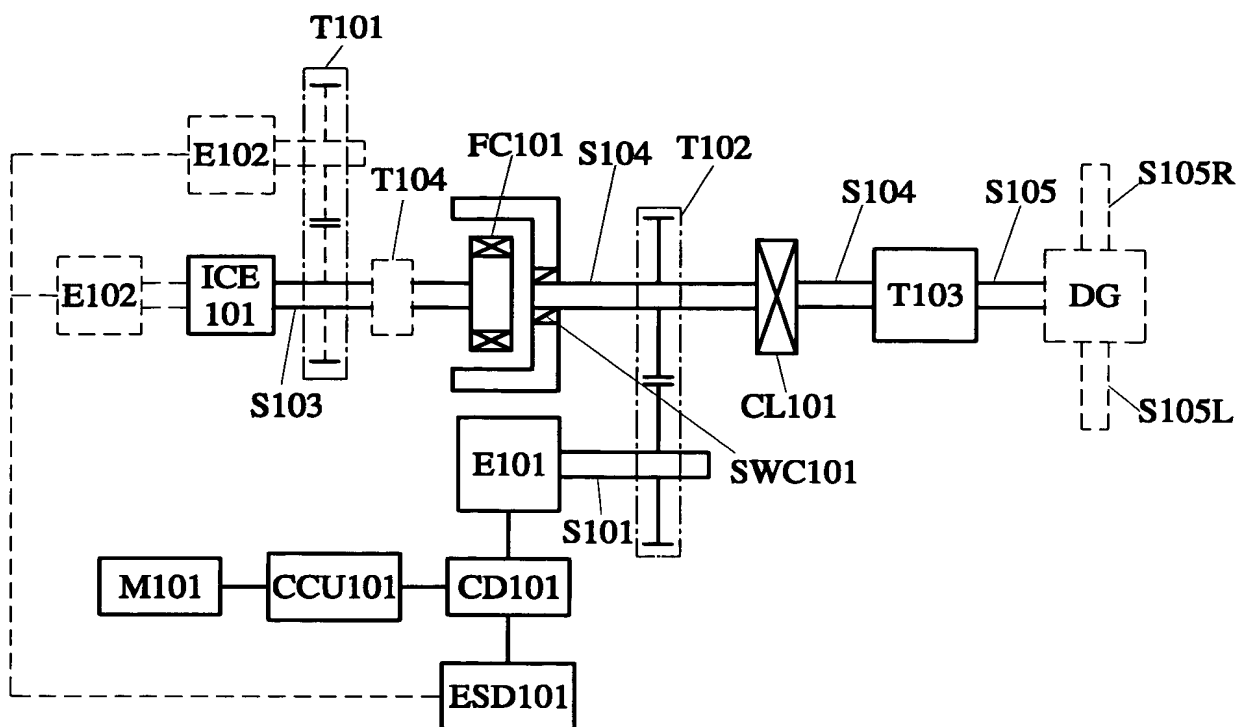


FIG. 30

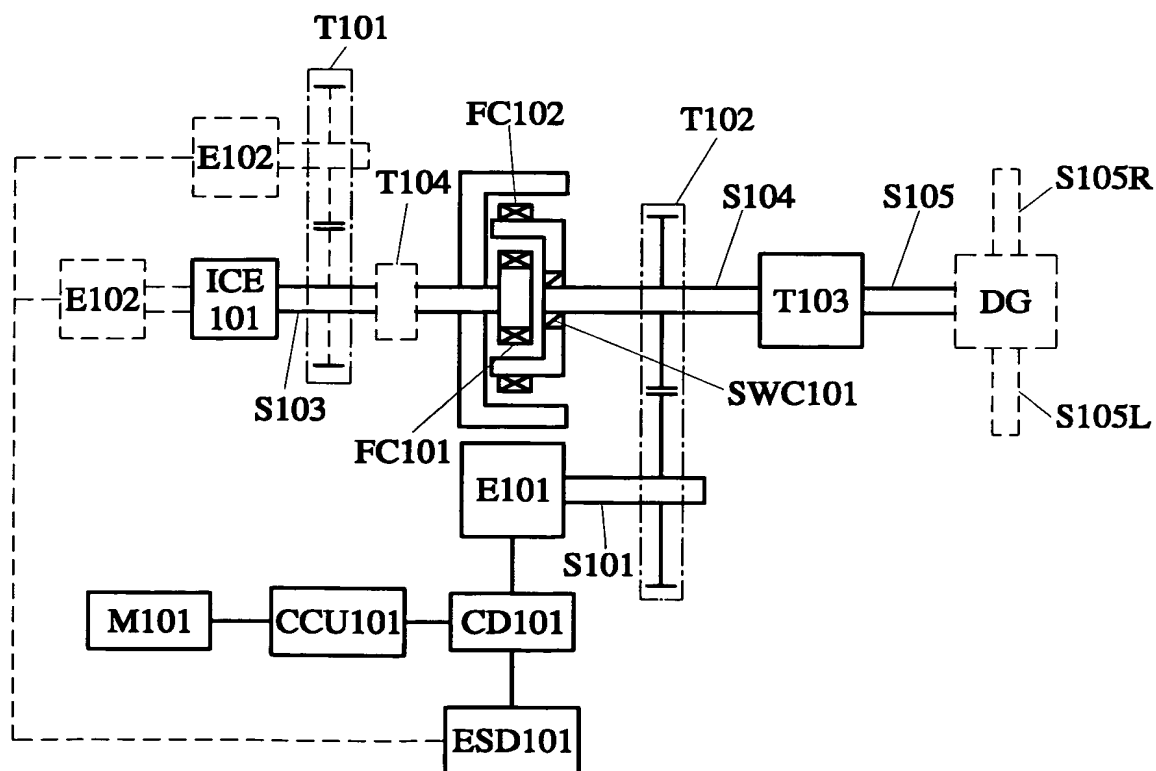


FIG. 31

FIG. 32

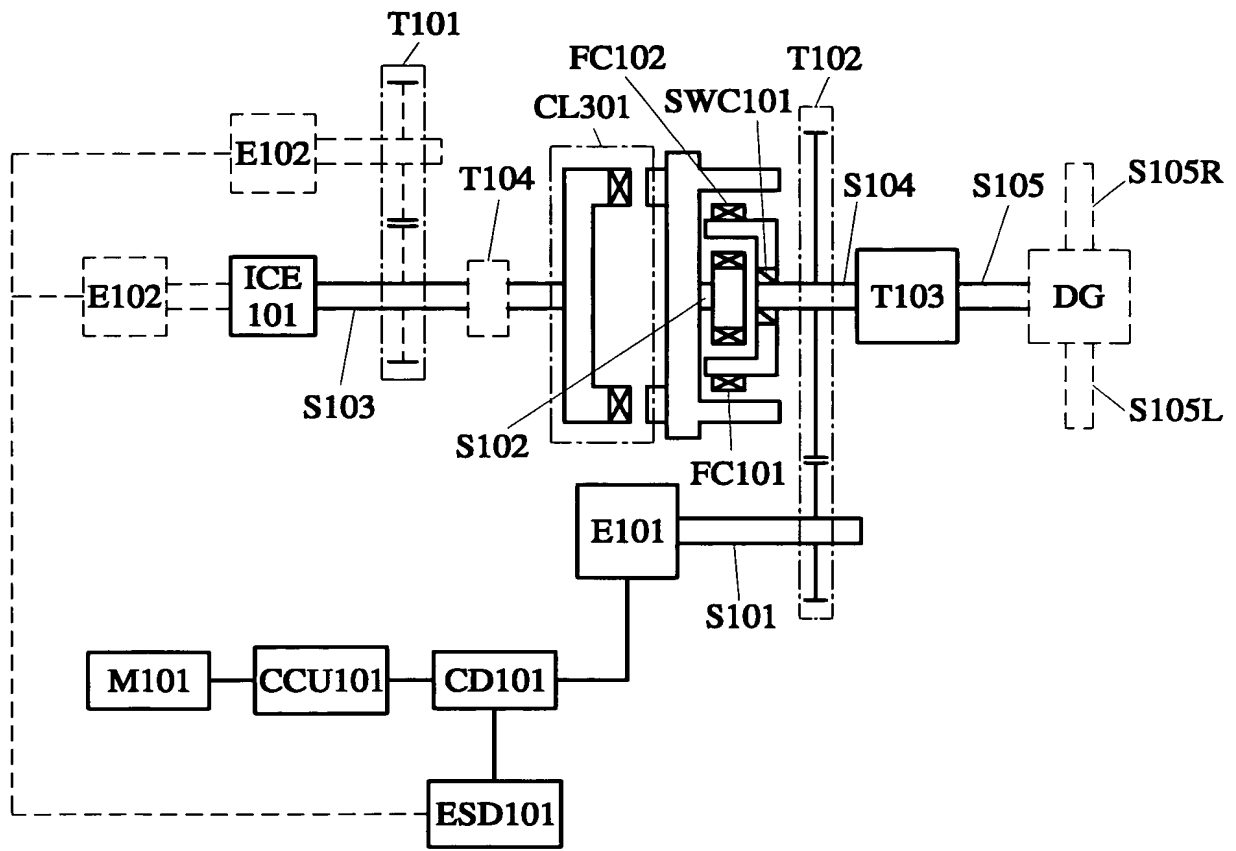


FIG. 32

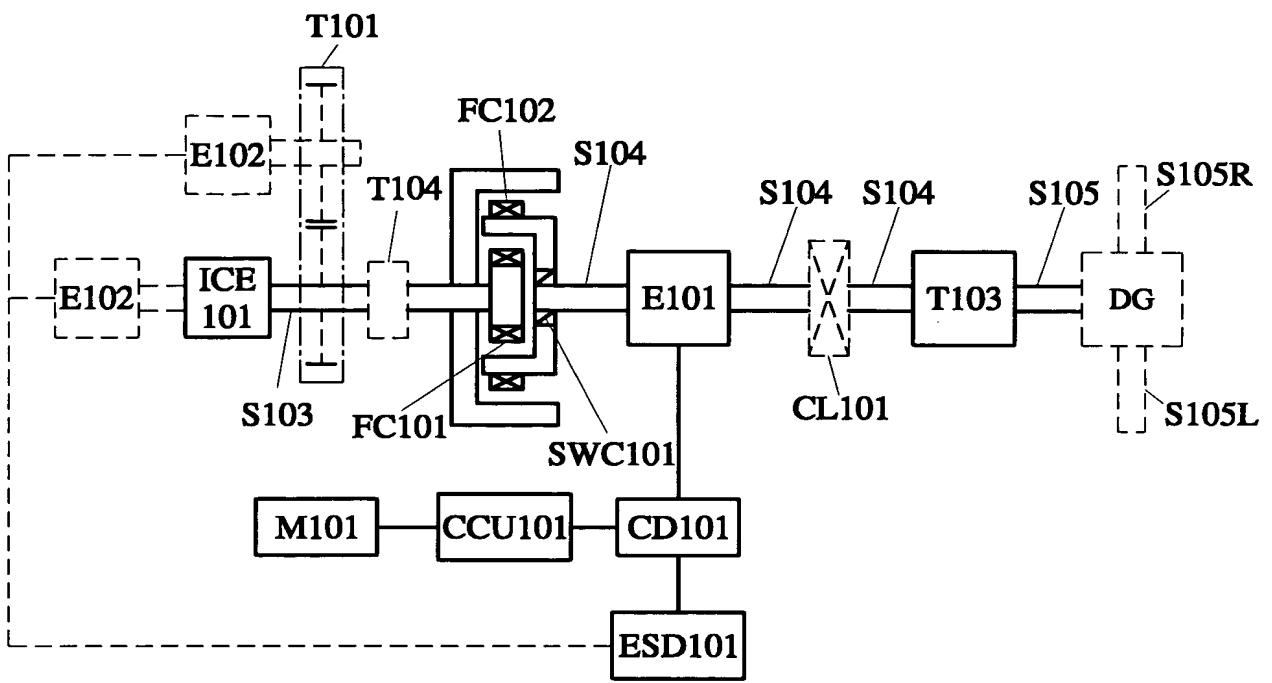


FIG. 33

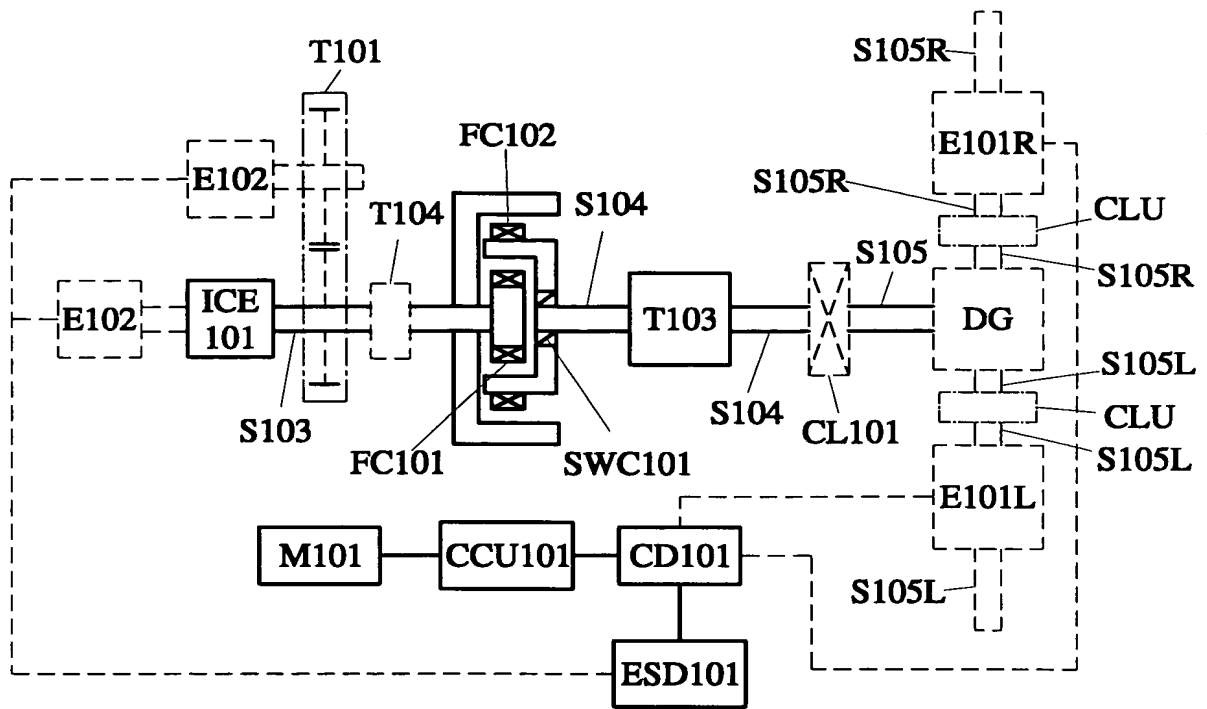


FIG. 34

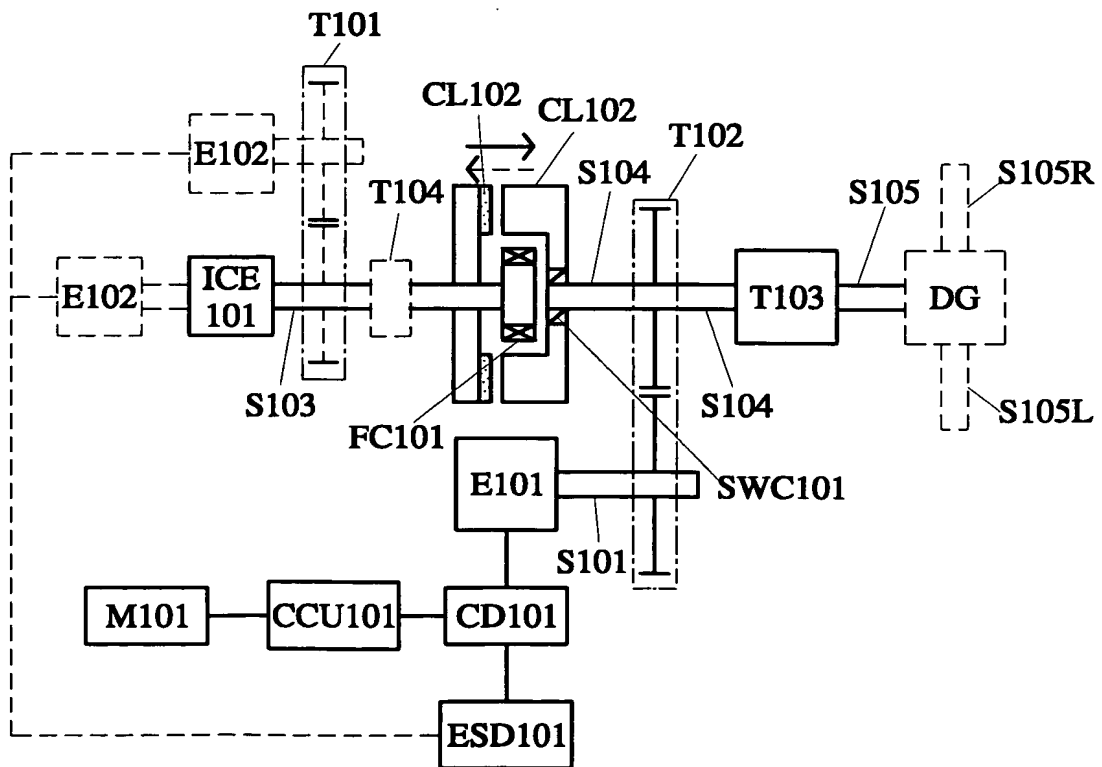


FIG. 35

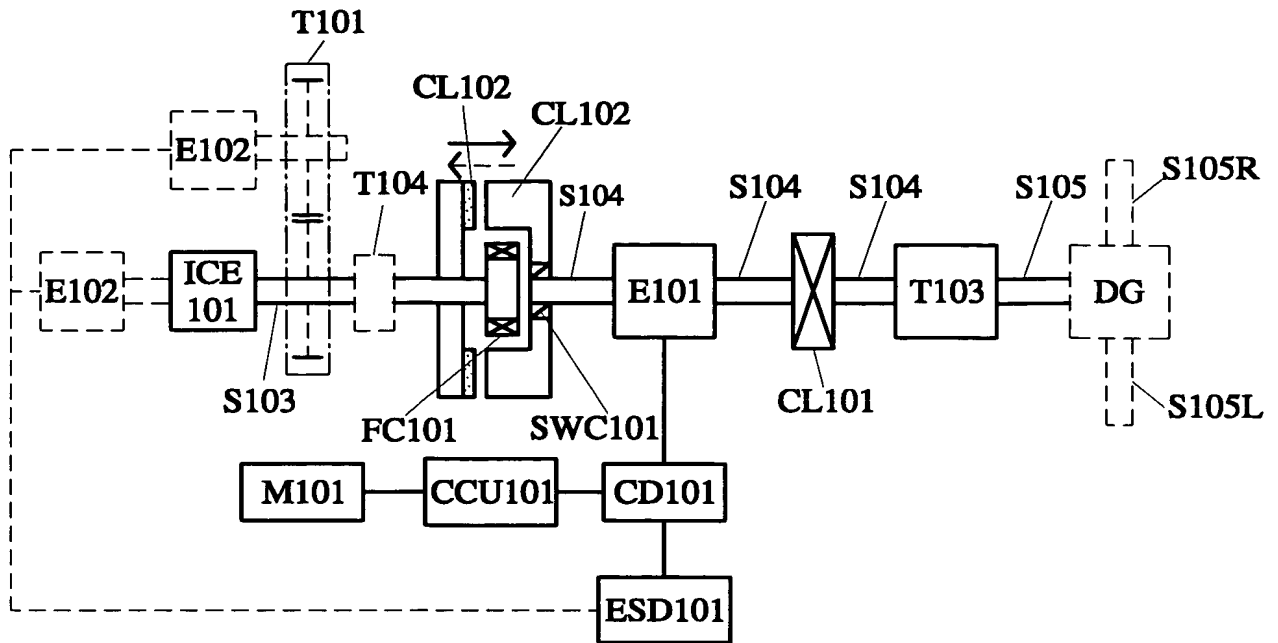


FIG. 36

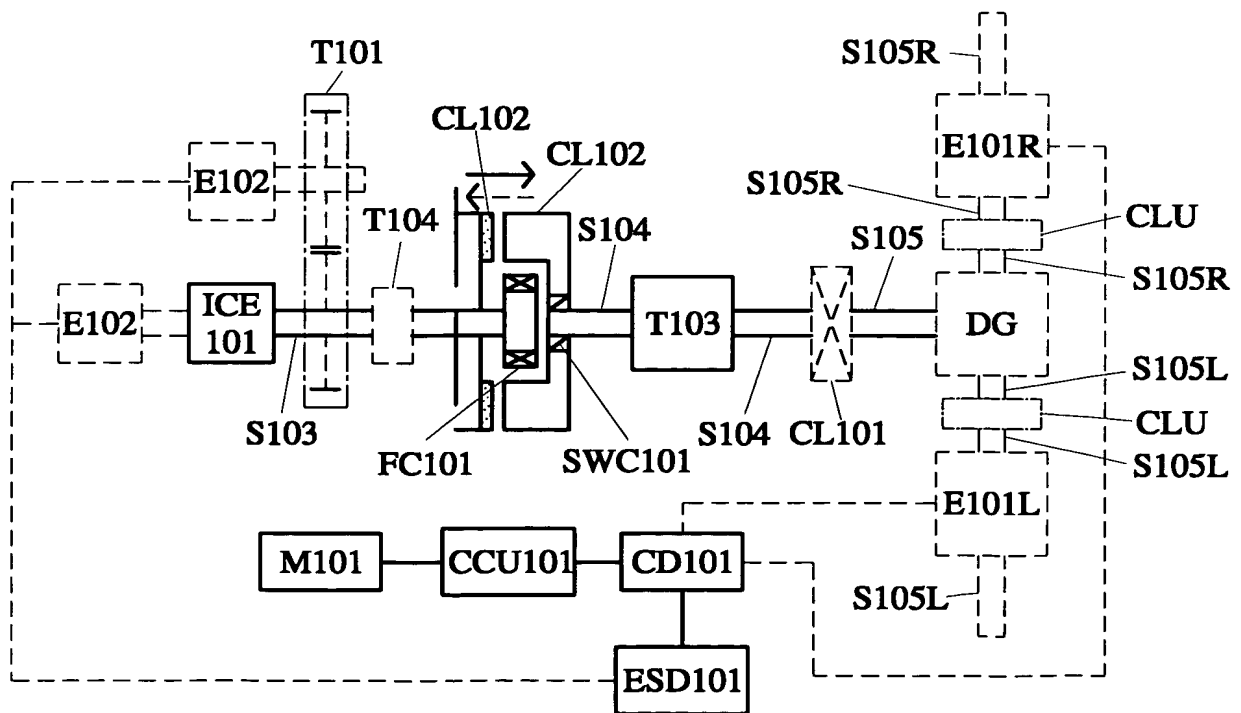
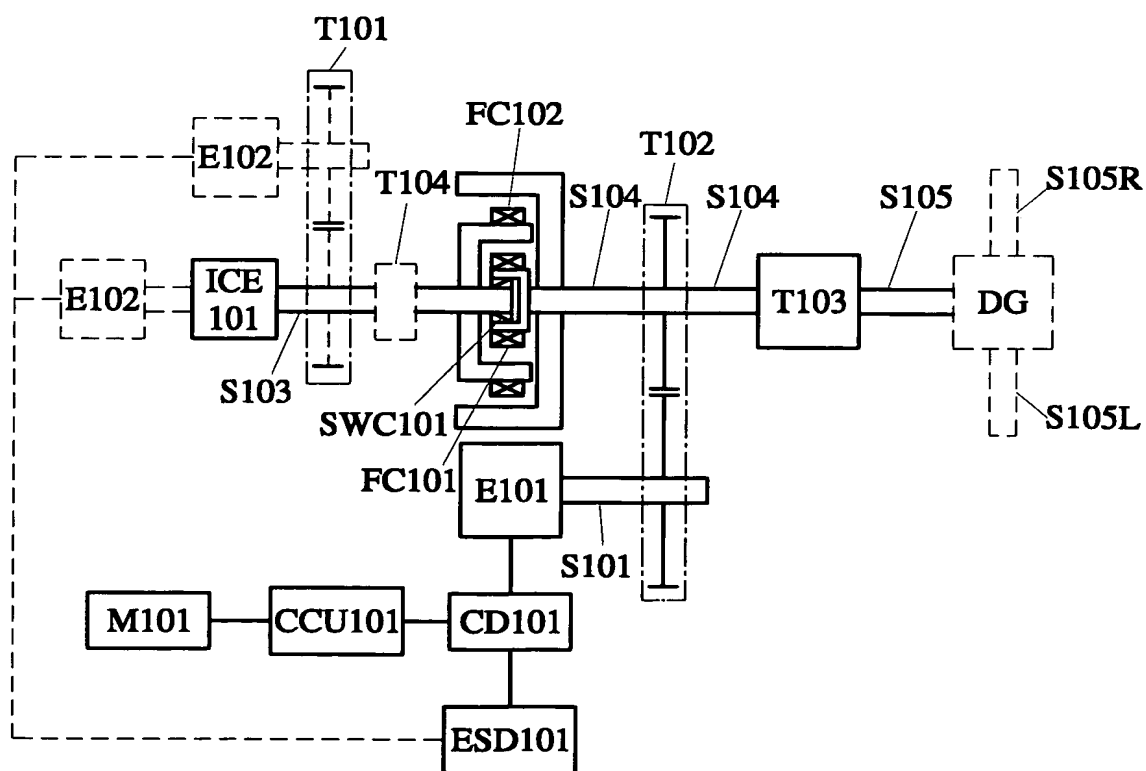


FIG. 37



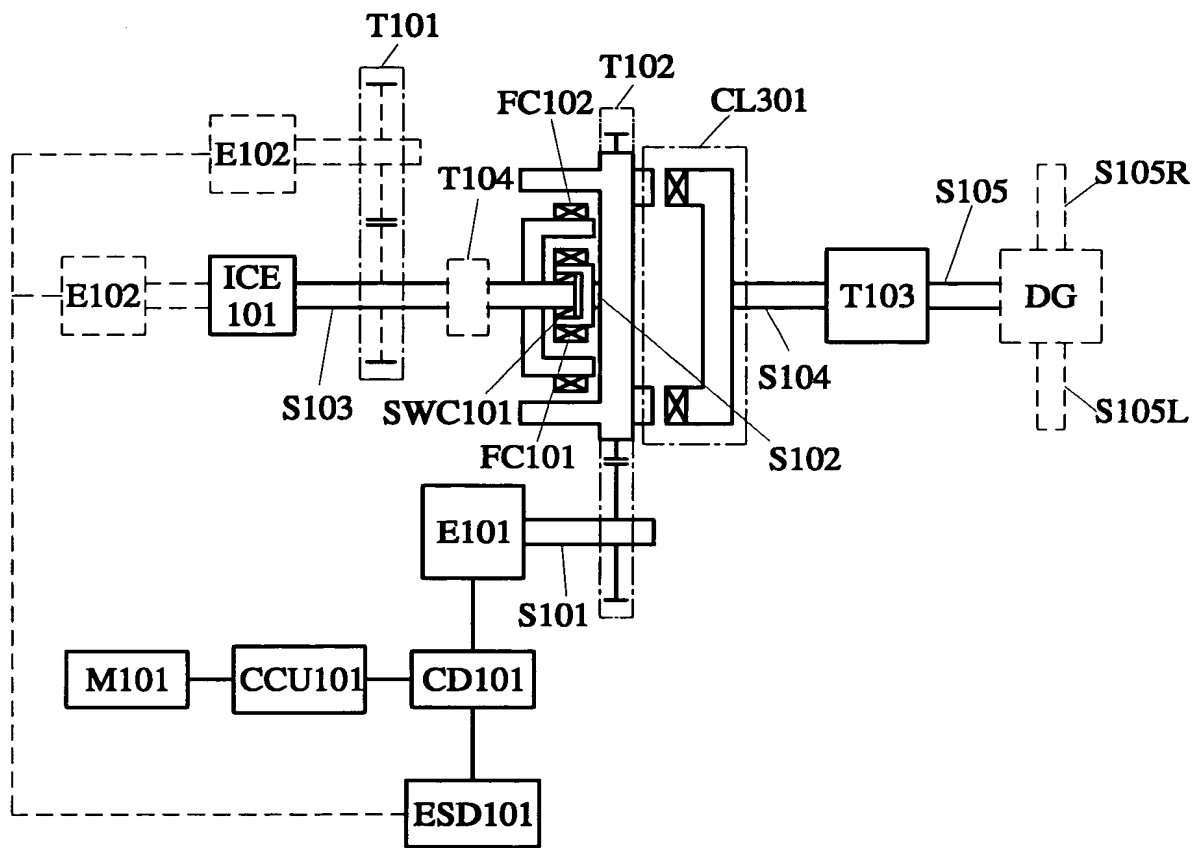


FIG. 40

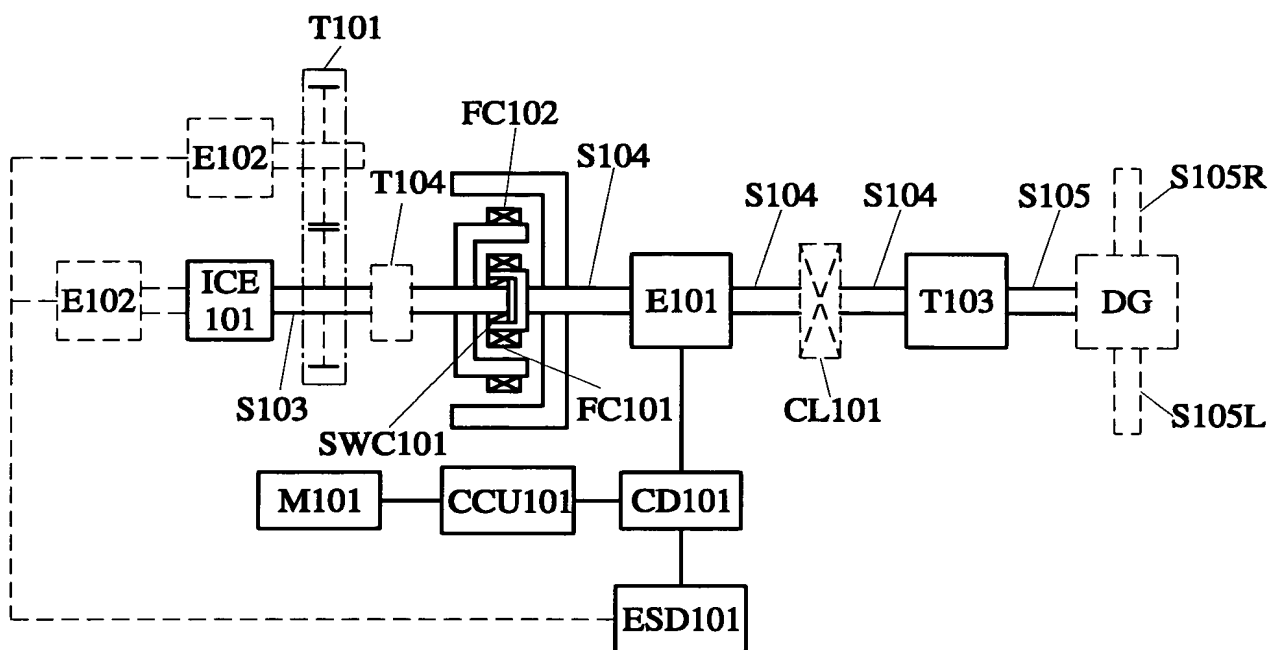


FIG. 41

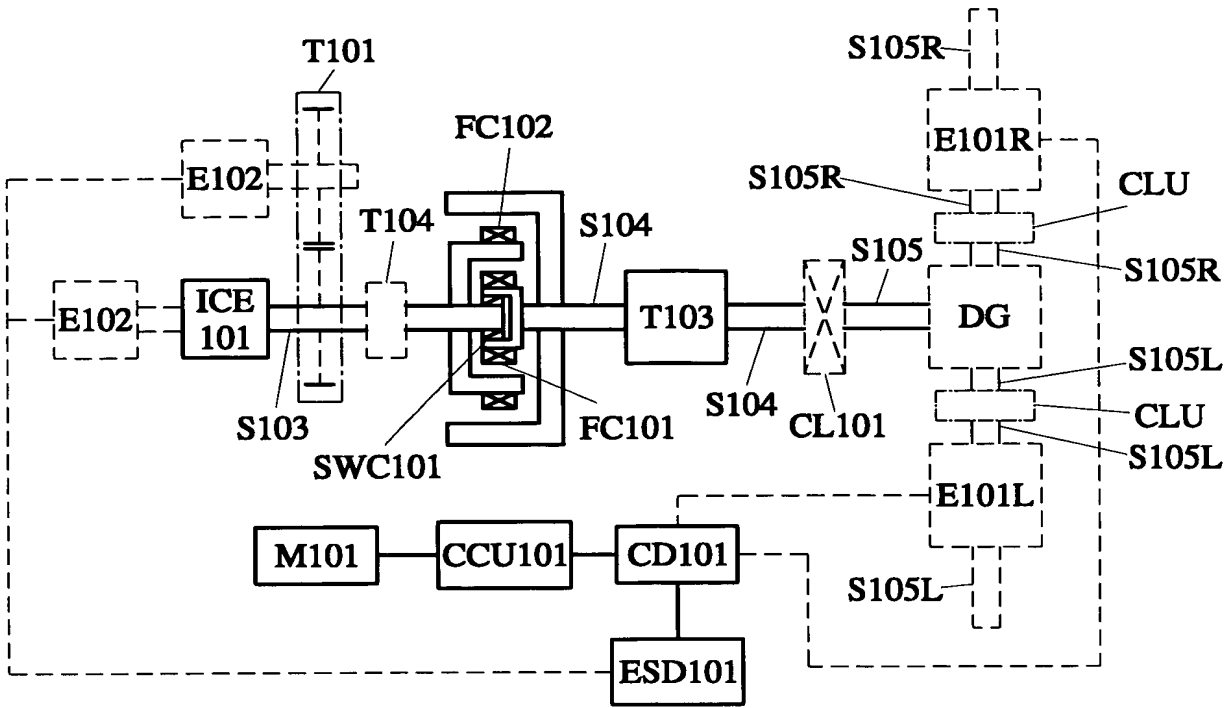


FIG. 42

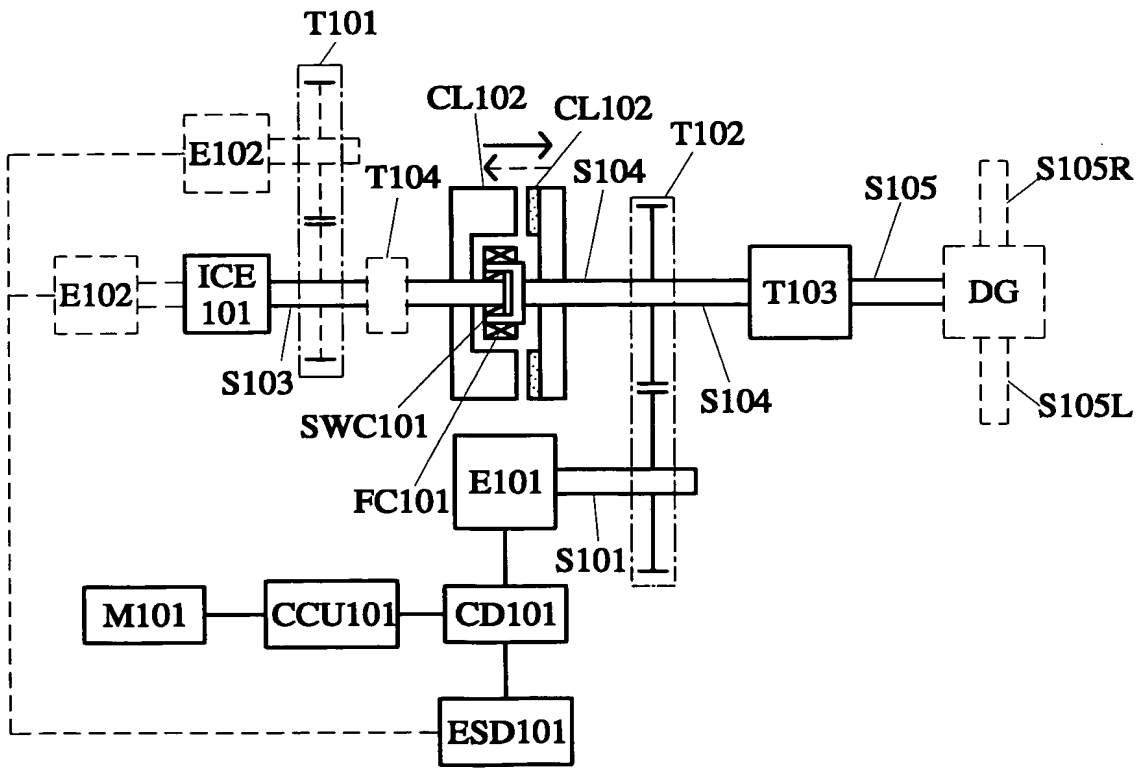


FIG. 43

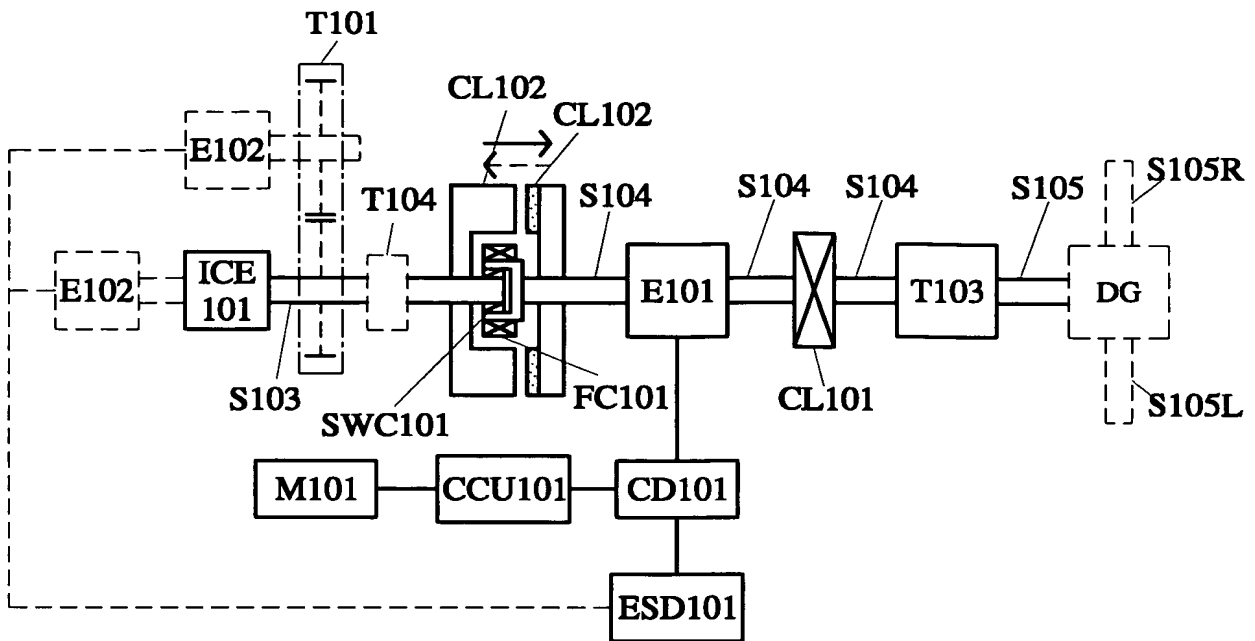


FIG. 44

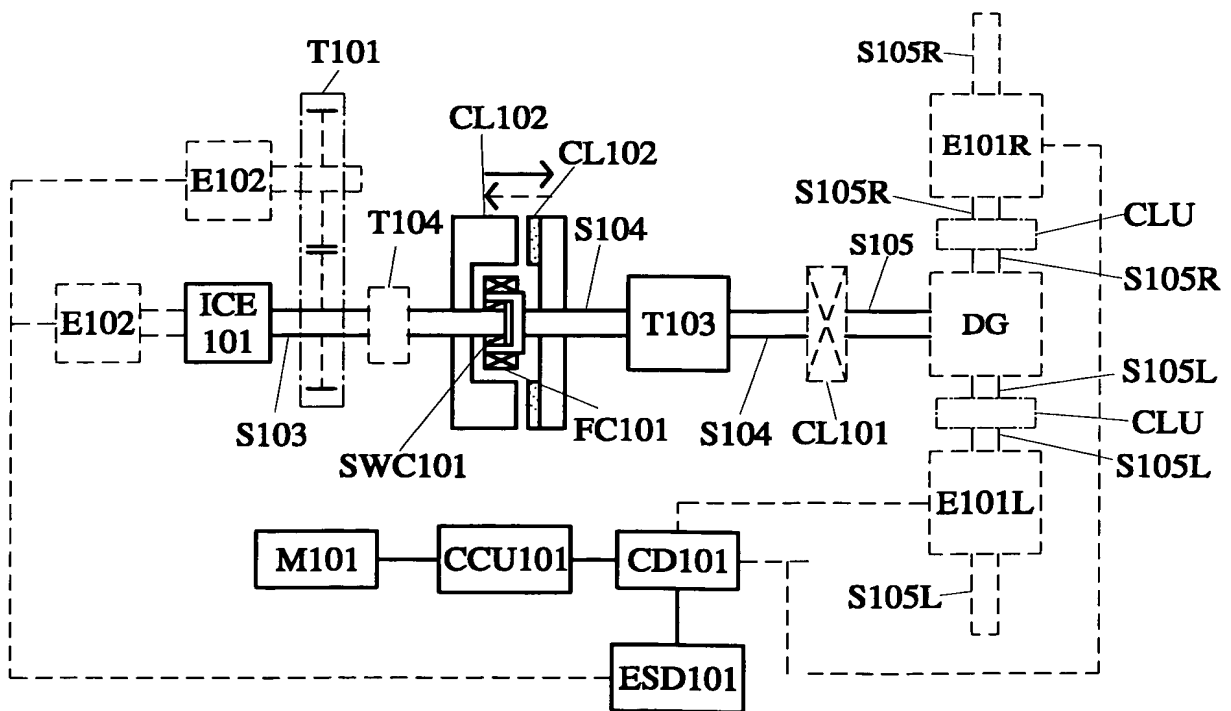


FIG. 45

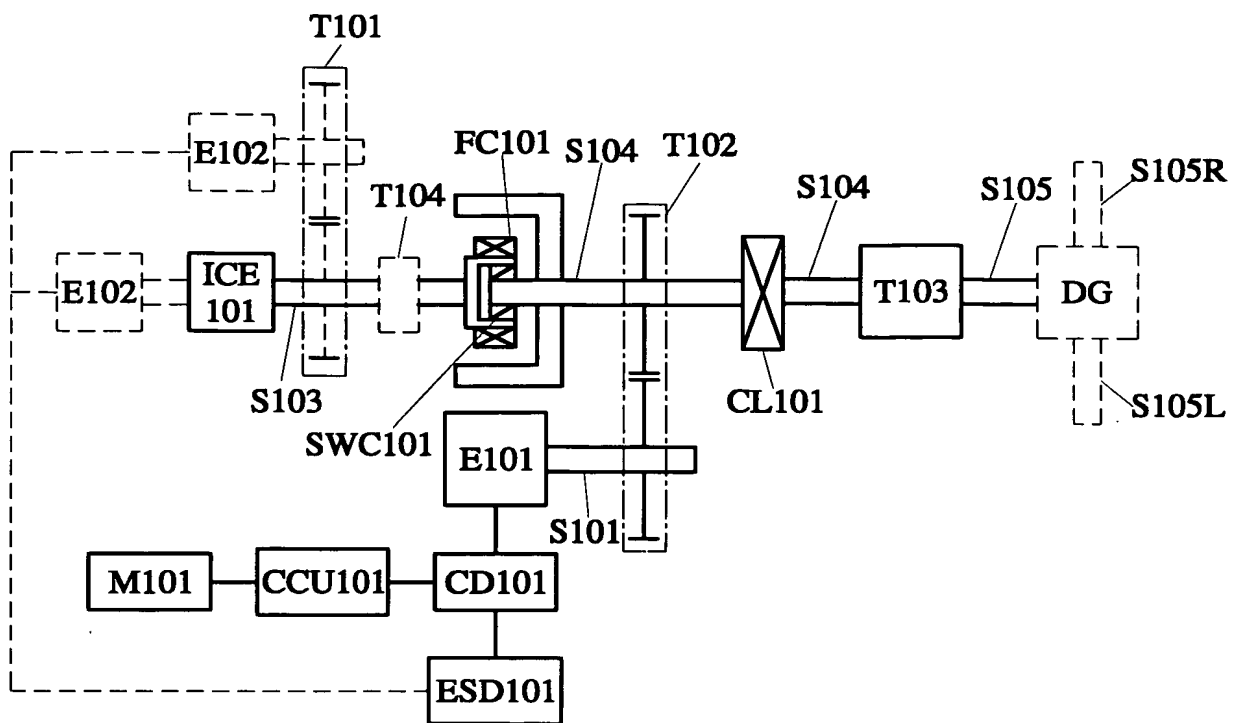


FIG. 46

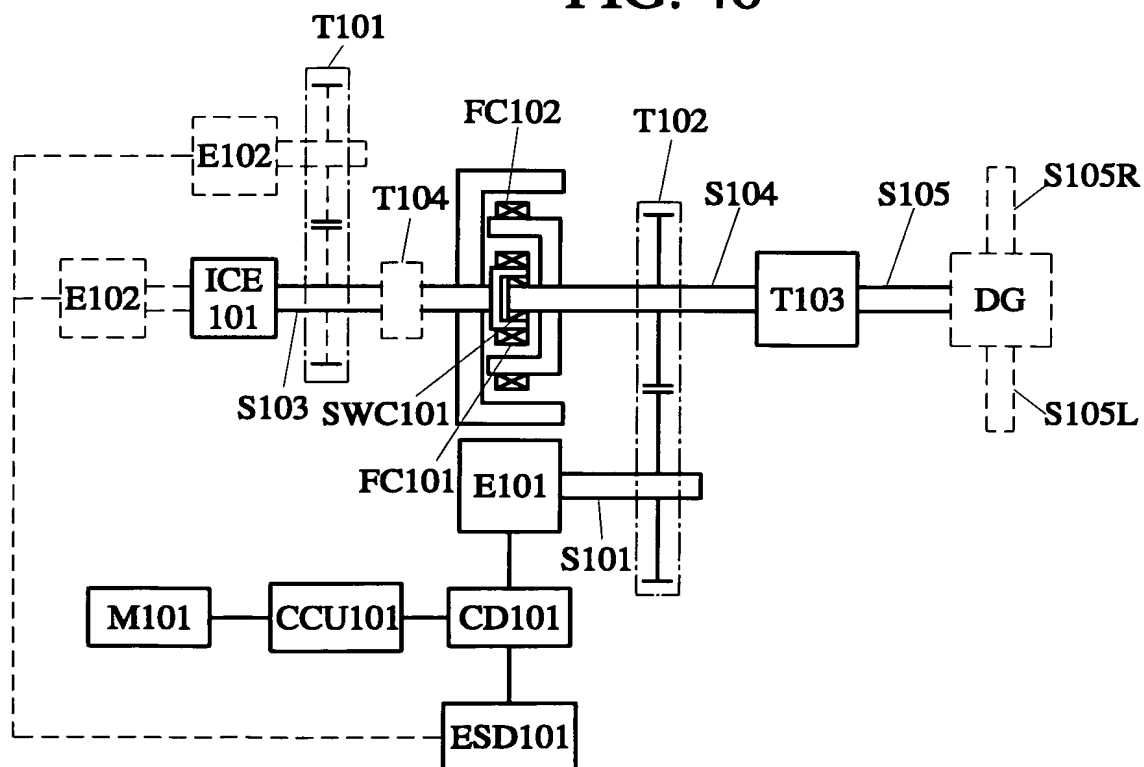


FIG. 47

FIG. 48

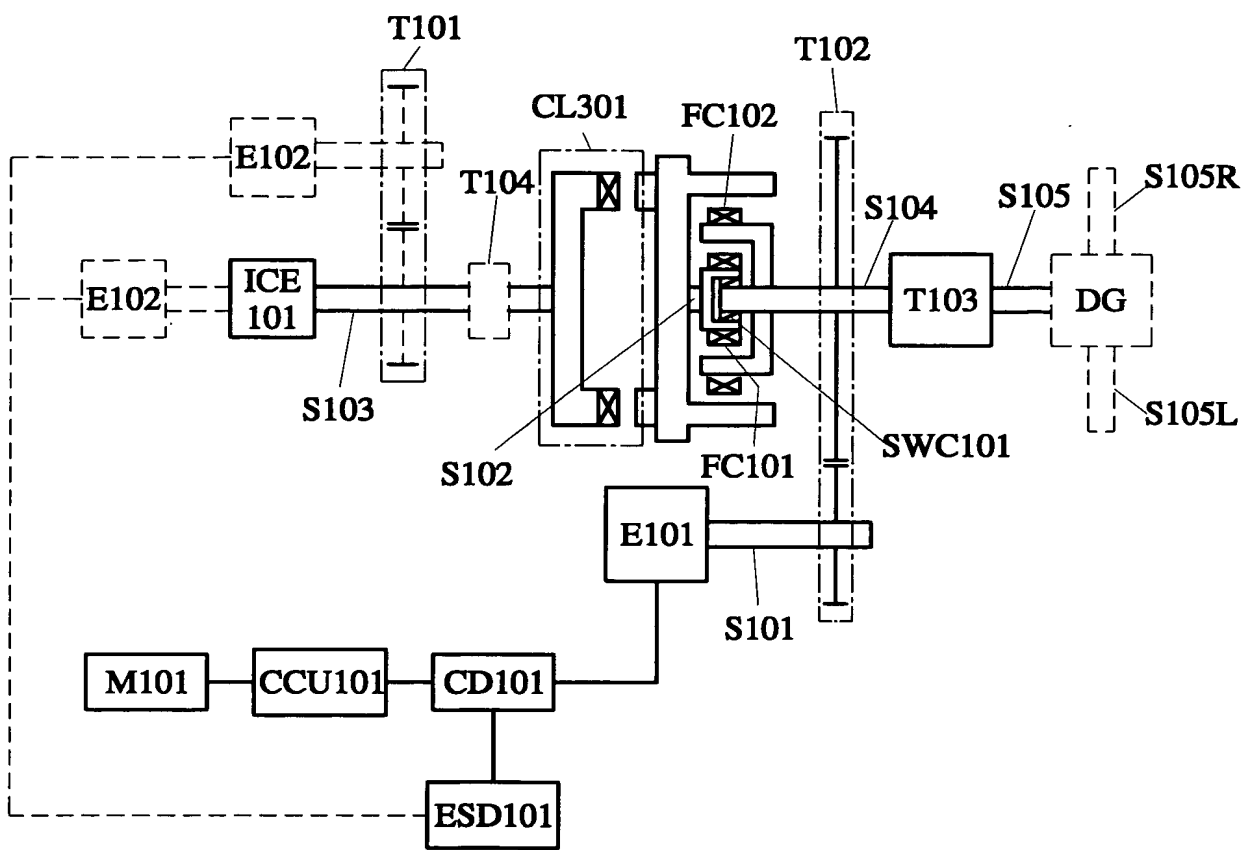


FIG. 48

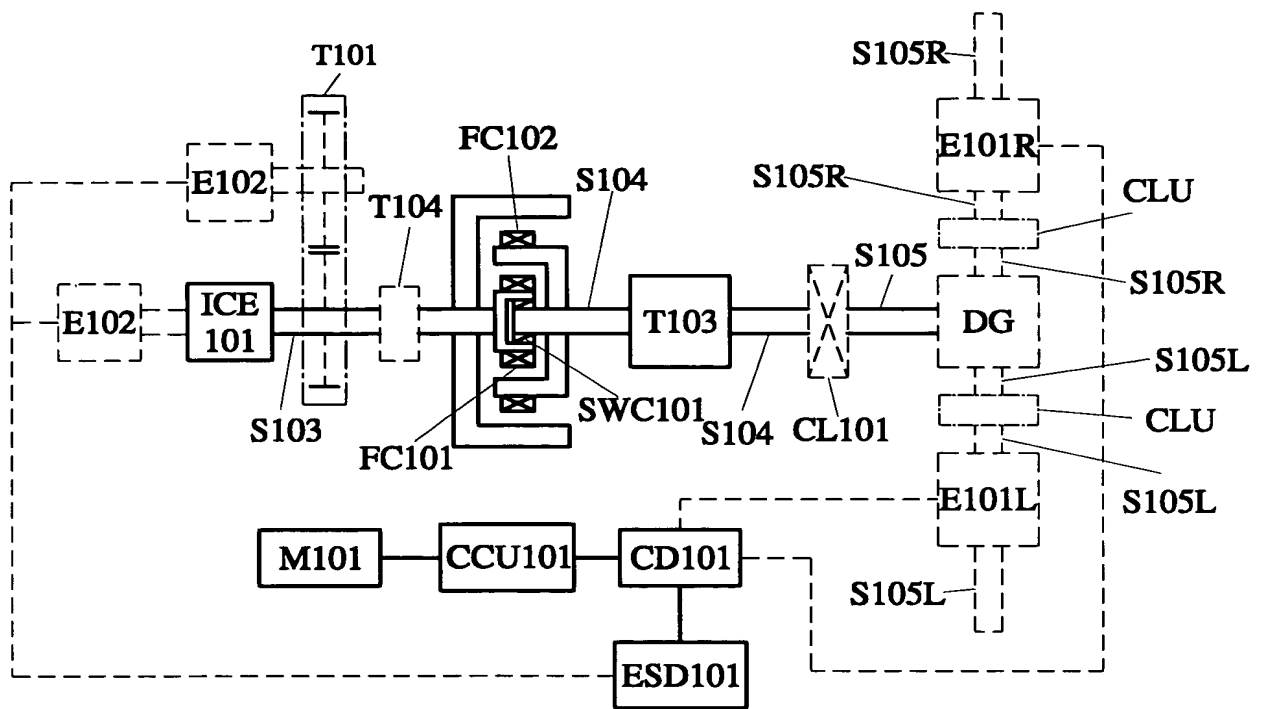


FIG. 50

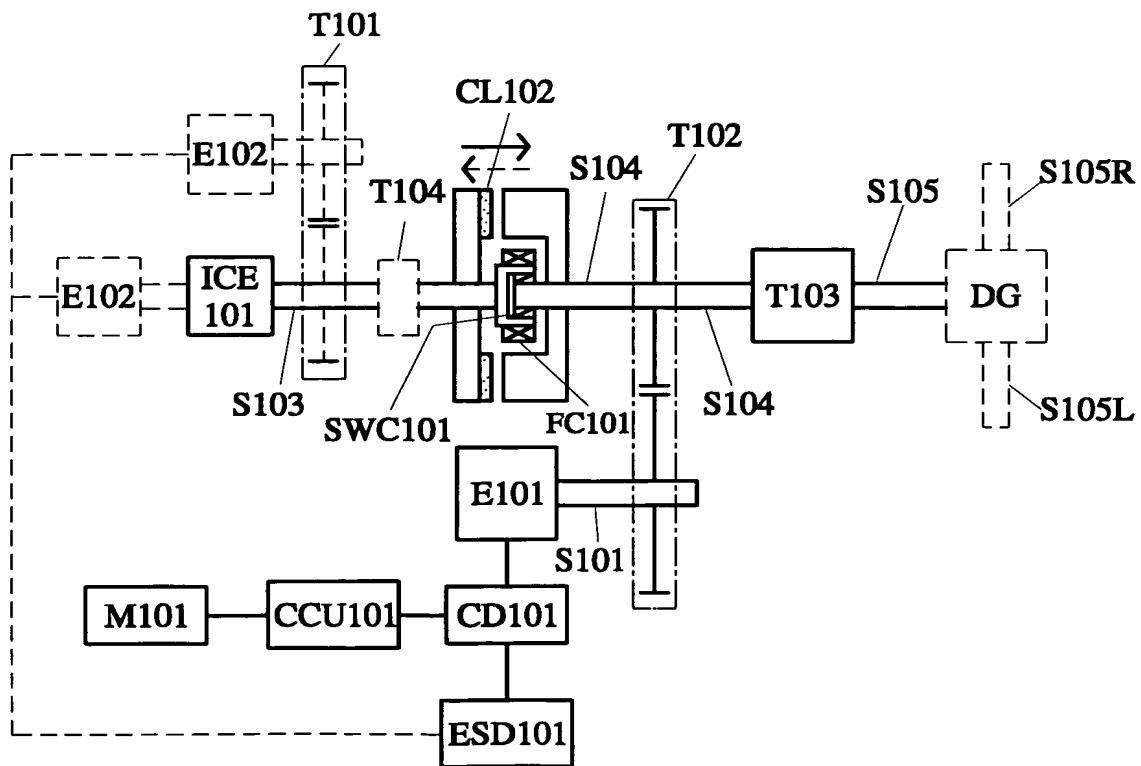


FIG. 51

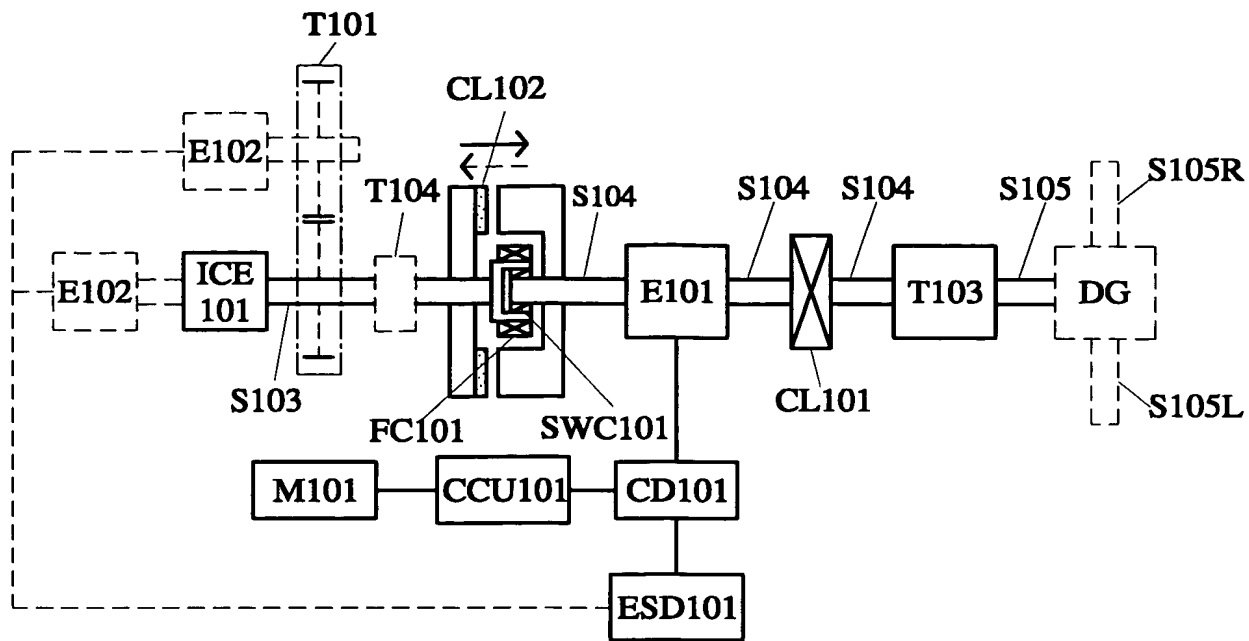


FIG. 52

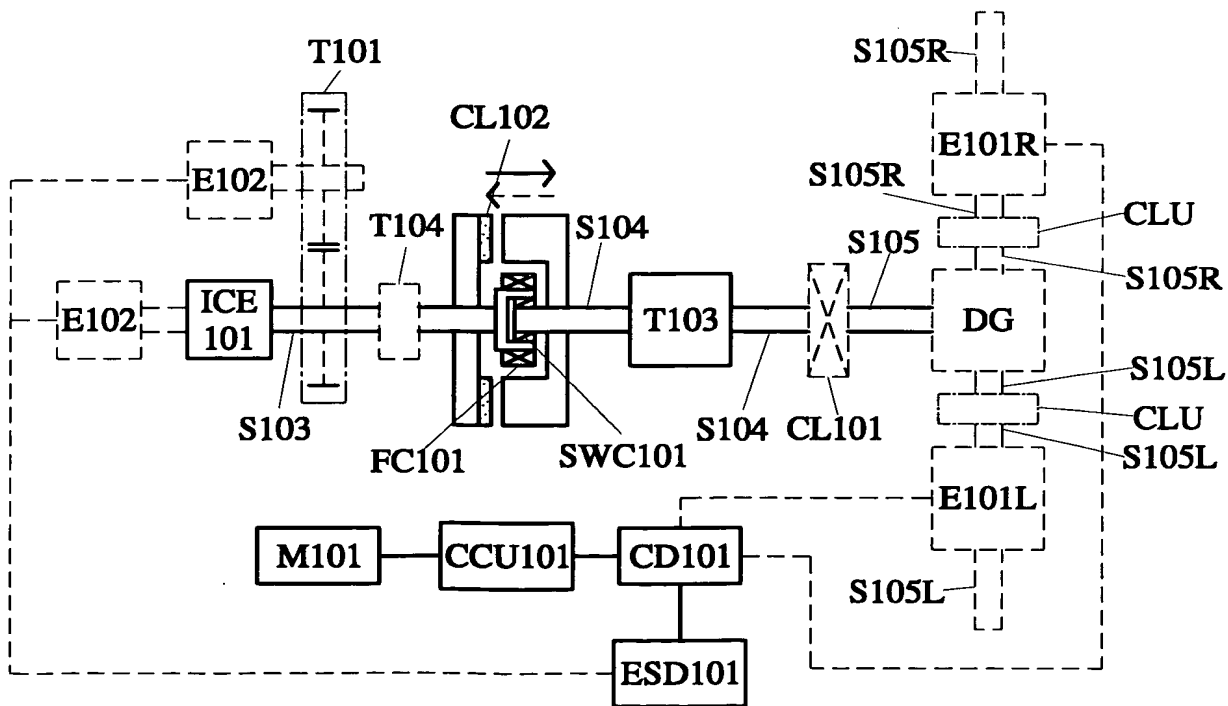


FIG. 53

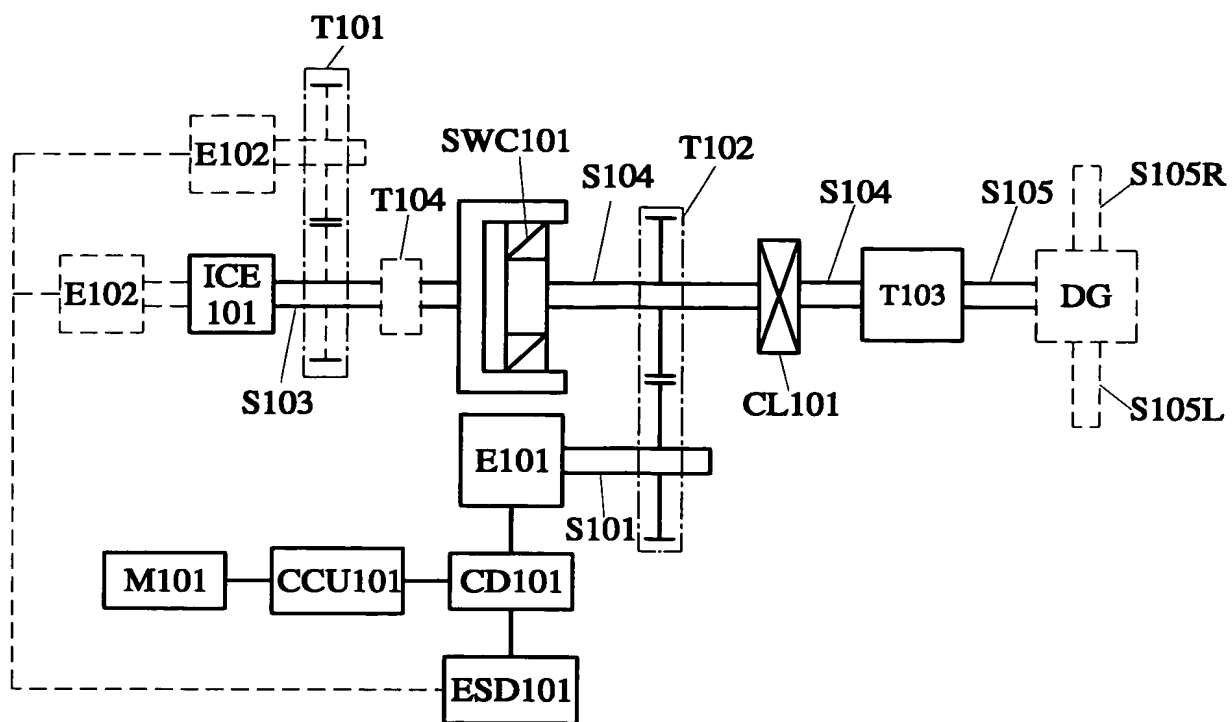


FIG. 54

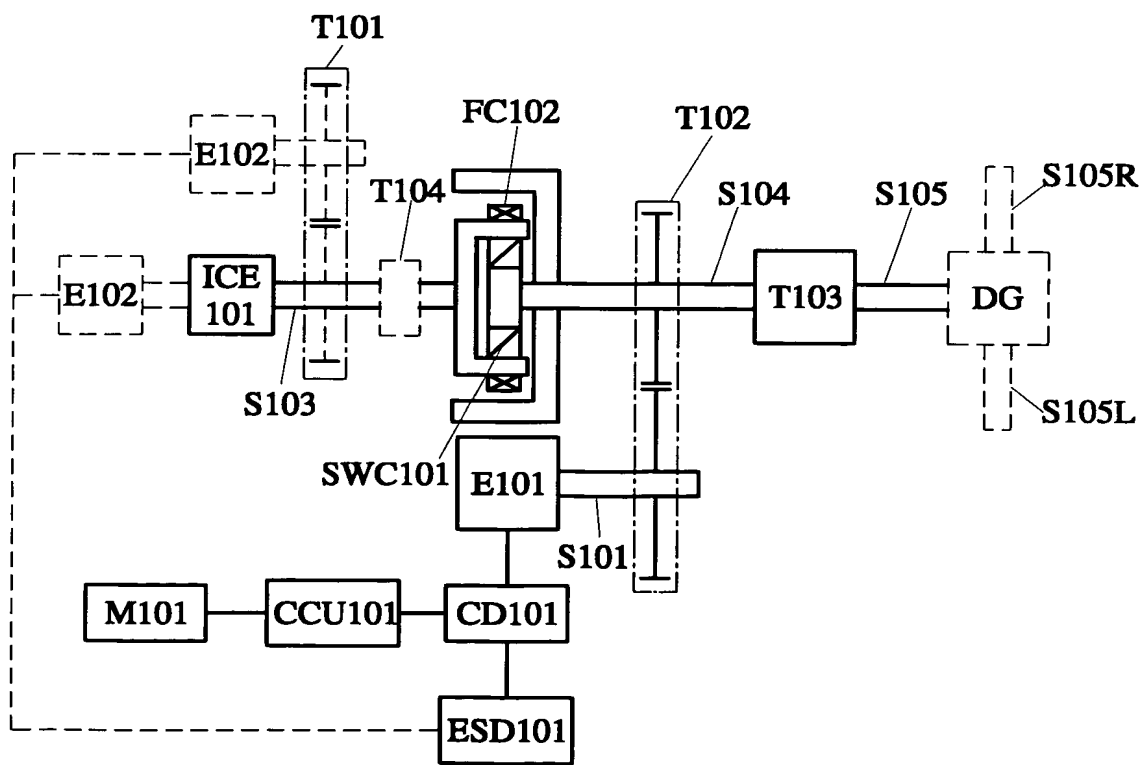


FIG. 55

FIG. 56

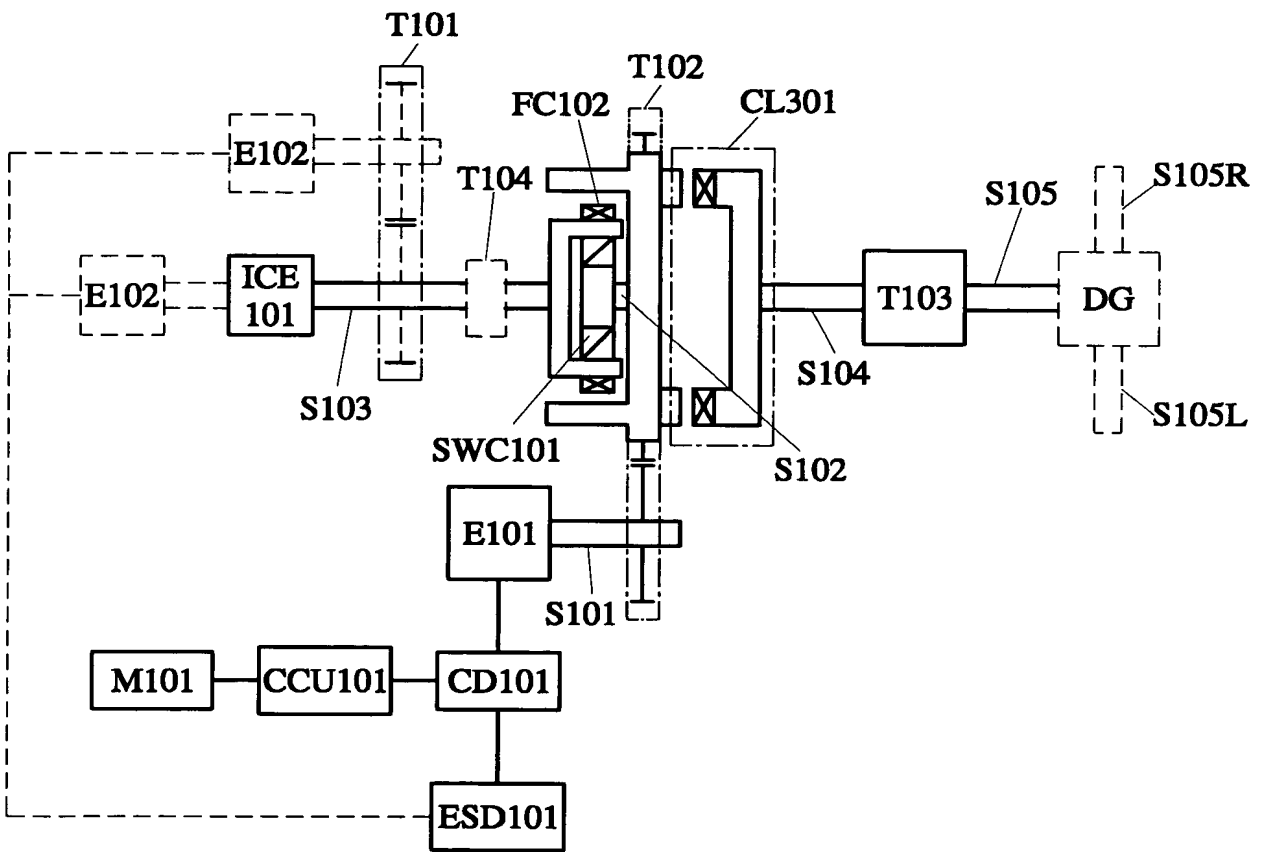


FIG. 56

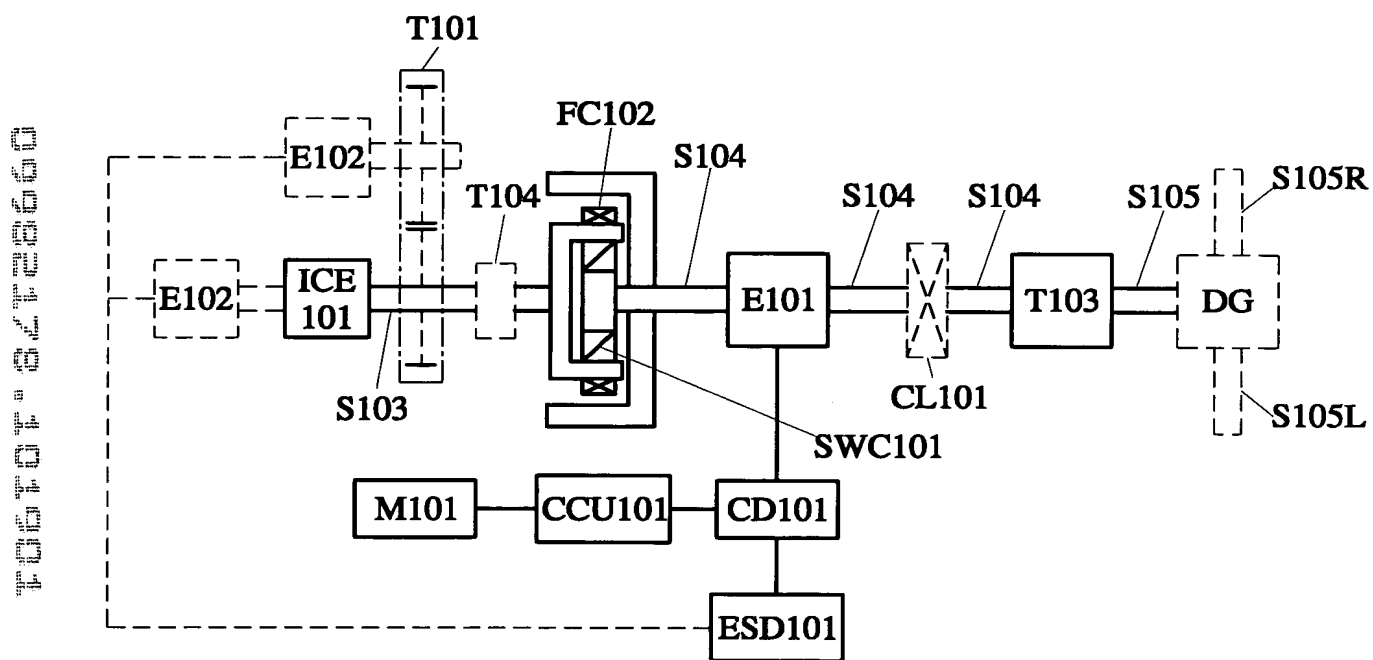


FIG. 57

The diagram illustrates a power plant system with the following components and connections:

- Reactor Section:** Includes a central core with fuel rods (FC102) and control rods (SWC101). A moderator/coolant pump (T104) circulates fluid through the core.
- Primary Loop:** Fluid flows from the reactor through a steam generator (S104) to a turbine (T103).
- Turbine and Generator:** The turbine (T103) is mechanically coupled to a generator (DG). The generator is connected to a load (CLU) via a switch (S105).
- Condenser and Cooling System:** The turbine exhausts steam into a condenser (S105L). The condenser is cooled by a secondary loop (S105R) that includes a condenser pump (T101) and a condenser (S103).
- Control and Monitoring:** A control system (CCU101) is connected to a monitoring unit (M101) and a data acquisition unit (CD101). The CD101 is connected to an external system (ESD101).
- Electrical System:** The generator (DG) is connected to a switch (S105) and a load (CLU). The load is connected to a switch (S105L) and a condenser pump (T101).

[illegible]

FIG. 59

[illegible]

FIG. 61